For producers of Sand and Gravel, Crushed Stone, Cement, Lime, Gypsum, and other nonmetallic minerals

MARCH 1957

PIT and QUARRY

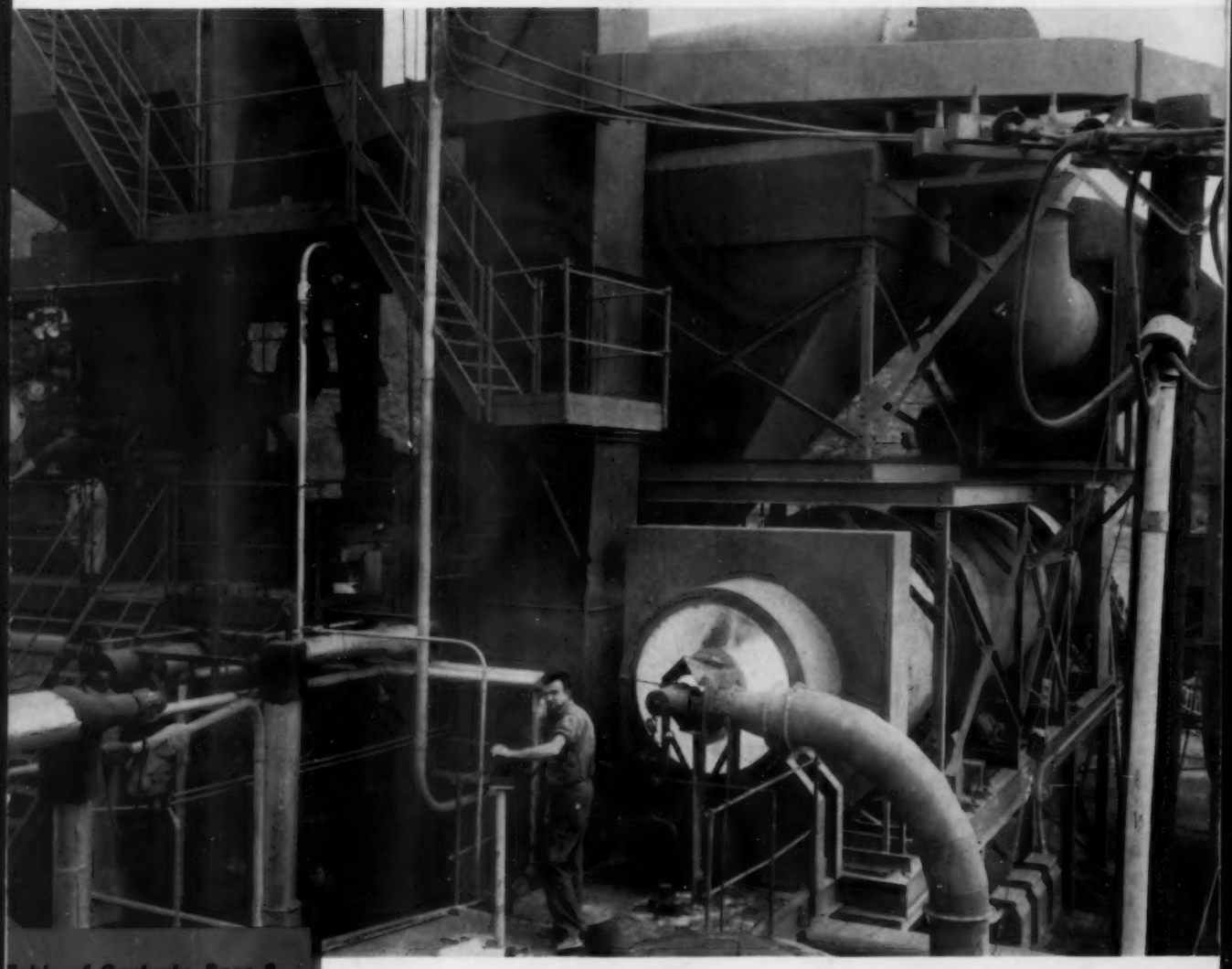


Table of Contents, Page 2

New Haven Trap Rock's New Asphalt Plant at North Branford, Conn. (See Page 102.)

NOW and NEW

...you can choose bag closing machines from the new, and augmented

BAGPAK® *Closer line*

New models geared to your production, cost and sales requirements. New Low Price range based on unique specialized designs for specific bag sealing needs and elimination of unnecessary "extras"

Now you may choose almost any combination of Bagpak® Closers to team up with filling and weighing machines you may already have.

- ▶ **ADAPTABLE TO ANY PRODUCT—ANY INDUSTRY**
- ▶ **HIGH OR LOW SPEED**
- ▶ **WITH OR WITHOUT CONVEYORS**
- ▶ **FULLY OR SEMI-AUTOMATIC**
- ▶ **FOR VARIABLE OR SAME-SIZE BAGS**
- ▶ **FOR VARIABLE OR ONE STYLE OF CLOSURES**

Bagpak's planning and service engineers will give you full benefit of all their experience with the latest and best bag filling and closing techniques.

All this adds up to lower costs, faster production, uniform, better-looking packaging, more efficient labor, faster undamaged deliveries. Call for Bagpak Planning Service – or write **Dept. P-3.**

See our complete line of Bagpak® Closers in action at the AMA Packaging Show, Booth #906, April 8-9-10-11, Chicago Amphitheatre.

International Paper COMPANY

BAGPAK DIVISION

220 EAST 42ND STREET, NEW YORK 17, N. Y.

BRANCH OFFICES: Atlanta · Baltimore · Boston · Chicago · Cincinnati · Cleveland · Dallas · Denver · Kansas City, Kansas · Los Angeles Minneapolis · New Orleans · Philadelphia · St. Louis · San Francisco · IN CANADA: The Continental Paper Products, Ltd., Montreal, Ottawa, Toronto

ROUGH LIMESTONE ROADS, hills and high speeds demand careful, competent tire maintenance. Sunnyhill speeds it with this portable hoist.

THIS RIGOROUS NONSTOP PACE typifies the fast-stepping strip-mining operation of Sunnyhill Coal Company at its Rehobeth, Ohio, mine. Daily take-out varies according to demand and availability of railroad cars—but ten 50-ton trucks and one 60-tonner average a yearly total of over 1 million tons! During its 25 years in business, Sunnyhill has always been conscious of tire expense and has gone more and more to Goodyears to help reduce costs.

Now Sunnyhill is switching to Goodyear's

3-T Nylon Cord TUBELESS!

Yes—now Sunnyhill specifies Goodyear 3-T Nylon Cord TUBELESS on all new equipment!

The reasons, according to Clayton Busse, Equipment Manager, are that in Sunnyhill's tests TUBELESS Goodyear tires ran 10 to 15° cooler in 80° weather—they have less down time from flats—and over-all tire performance is better.

Goodyear TUBELESS tires are standard, or can be specified, on foremost original equipment, *no matter how large.* For change-over of present equipment, contact any Goodyear dealer. Goodyear, Truck Tire Dept., Akron 16, Ohio.

Buy and Specify GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

All-Weather, Road Lug, Sure-Grip—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

Now in Triple-Tough Triple-Tempered 3-T Nylon Cord — Tubeless or Tube-Type!

Look for this nearby Goodyear dealer sign for better tire values—better tire care.

PIT AND QUARRY, March, 1957, Vol. 49, No. 9. Published monthly by Pit and Quarry Publications, Inc., 431 South Dearborn St., Chicago 5, Ill. Subscription price $3 for 1 year in the U.S., possessions and Canada, Central and South America $10 for 1 year, elsewhere $15. Single Copy $.50 except $1 for January, May and July. Entered as second class matter February 28, 1932, at the Post Office at Chicago, Ill., under the Act of March 3, 1879. Postmaster: Please send notices on Form 3578 and copies returned under label Form 3579 to 431 South Dearborn Street, Chicago 5, Ill.

pit and quarry

THE BASIC MAGAZINE OF A BASIC INDUSTRY

MARCH 1957 Vol. 49 No. 9

IN THIS ISSUE:

EDITORIAL
Zoning and Public Relations 10

PLANT
New Haven Trap Rock Adds Asphalt Plant at North Branford, Conn. 102
Arizona Gypsum Corporation Opens Raw Products Plant 120
19,000,000 Cu. Yd. of Gravel for Salt Lake Fill 132
Expansion at Bessemer 136
Edward Balf Company's Newest Crushed Stone Plant 144
Lightweight Aggregate a Basic Factor of Barrett Operations .. 162

ASSOCIATIONS
N.C.S.A.'s 39th Convention Draws Record Attendance 86
Slag Plant Operators Hold Fourth Annual Meeting 96
Annual N.A.L.I. Meeting Reflects Industry's Vigor 122
Second N.C.L.I. Convention Shows Group Gathering Momentum 155

REVIEWS AND FORECASTS
Canadian Cement Review 106

THE CONCRETE MANUFACTURER

EDITORIAL
The New Road Program and the Concrete Industries 301

PLANT
Small Block Business Prospers 340
New Dutch Durox Gas Concrete 346

ASSOCIATIONS
Canadian N.C.P.A. Meeting 322
Conference on Quality Concrete 330

TECHNICAL
Rx Ready Mix—Warm Concrete, Lower Strength 319
Industrial Radio Pays Off 326
Testing Prestressed Concrete in Southern Florida 350

SAFETY
National Concrete Masonry Association Safety Competition .. 328

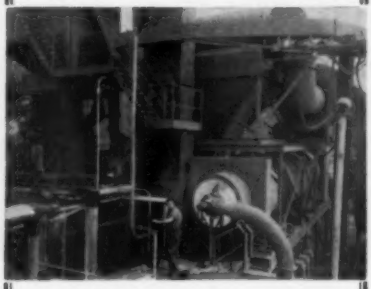
GENERAL
Calling All Ready-Mix Producers—What Is Your Public Relations Score? 334

DEPARTMENTS

Washington News Letter 12
News of the Industry 23
Coming Events 23
Industry Personalities 52
Obituaries 56
New Machinery 58
Labor Developments 79
Screenings 84
More Information Please 187
Legal Decisions 226
Manufacturers' News 240

News of the Concrete Industries . 303
New Machinery for the Concrete Industries 366
Index to Advertisers 394

Cover Picture



• The PIT AND QUARRY cover picture this month shows the newest asphalt plant installed by the New Haven Trap Rock Company, New Haven, Conn.—the sixth to be constructed for the firm in the last decade. Asphalt products are shipped normally within a radius of 30 miles. However, due to the fact that the plant is meeting demands of the new Connecticut turnpike construction, the shipping radius will increase in accordance with the progress of that project.

Published on the first of each month for producers and manufacturers of Cement, Crushed Stone, Gypsum, Lime, Sand, Gravel and other nonmetallic minerals.

Copyright 1957 by Pit and Quarry Publications, Inc., 431 S. Dearborn Street, Chicago 5, Illinois.

PIT AND QUARRY magazine was founded by H. W. Baumgartner, October, 1916.

To subscribers: When requesting change of address, kindly send old as well as new address.

PIT AND QUARRY IS INDEXED IN THE ENGINEERING INDEX

Hook onto a good thing

MAKE BIGGER PROFITS
THE EASY EASTON WAY

EASTON SKY HOOK* WITH EASTON TRAILERS

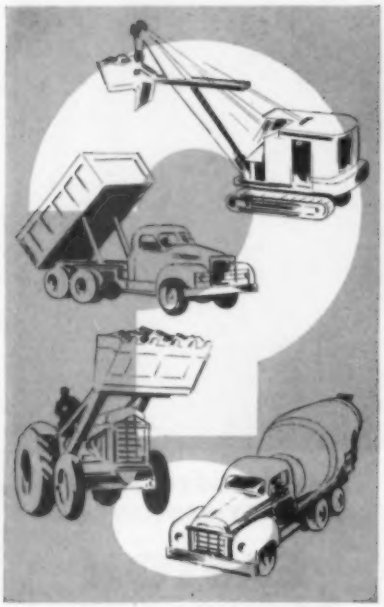
*EASTON Automatic Electric Overhead Dumping System

Handling **more stone at lower cost in more quarries,** year after year

EASTON trailers are available, single or in tandem, to handle any payload up to 75 tons. Write or telephone for technical information.

EASTON®
EASTON CAR & CONSTRUCTION COMPANY • EASTON, PA.

B-1075



DO YOU KNOW OR ASSUME YOUR EQUIPMENT IS BUSY?

SERVIS RECORDERS TELL YOU AT A GLANCE WHEN IT IS— HOW LONG IT'S IDLE

For every piece of equipment that moves during work, trucks, front-end loaders, ready-mixers, graders, etc., bolt on a tamperproof Servis Recorder and it will accurately chart busy time and all stops or delays.

It writes its own permanent record for daily, weekly or for 3 day periods.

You can put your finger on costly delays or overtime and determine the cause from this unquestioned record.

Proven by over-the-highway haulers and industry for 46 years, low-cost Servis Recorders are ready now to help you increase productivity and profits.

Ask for the name and address of Mr. S-R, our nearest qualified representative, for help on your problems or write for our new "Off-the-Highway Bulletin"

THE SERVICE RECORDER COMPANY
1013-X Rockwell Ave. • Cleveland 14, Ohio

pit and quarry

WALTER E. TRAUFFER
Editor

HARRY F. UTLEY
Pacific Coast Editor

ROY L. PECK
Field Editor

BUREN C. HEROD
Field Editor

M. E. ANSEL
Assistant Editor

JAMES G. KOSTKA
Director of Marketing and Research

JANET M. COHN
Editorial Assistant

JAMES E. MONTGOMERY
Chairman of the Board

WILLIAM A. WILSON
President

RAY L. SMITH, JR.
Senior Vice-President

W. T. KLUSSMAN
Secretary-Treasurer

ROBERT L. RUDD
Circulation Manager

GEORGE P. GRANT
General Sales Manager

HAROLD L. DAVIS
Production Manager

CHICAGO BUSINESS OFFICE
431 South Dearborn Street, Chicago 5, Illinois, HArrison 7-8558

FRANK J. CORNYN
Vice-President and Midwest Sales Manager

RAYMOND S. NEUWELT
Representative

NEW YORK BUSINESS OFFICE
370 Lexington Avenue, New York 17, N. Y., MUrray Hill 5-4438

JOHN R. DUBLE
Vice-President and Eastern Sales Manager

RICHARD J. MURPHY
Representative

CLEVELAND BUSINESS OFFICE
453 The Arcade, Cleveland 14, Ohio, CHerry 1-4431

CHARLES H. BUSSMANN
Vice-President and Central Sales Manager

J. G. JOHNSON
Central Advertising Manager

WEST COAST OFFICE
HARRY F. UTLEY, 820 N. Magnolia Avenue, Whittier, California

REPRESENTATIVES

FRED W. SMITH
1212 41st St., Belview Heights, Birmingham 8, Alabama

THE McDONALD-THOMPSON CO.
San Francisco, California

EDWARD T. THOMPSON
3727 W. 6th Street
Los Angeles 5, California

T. HARRY ABNEY
National Building
Seattle 4, Washington

ROY M. McDONALD
625 Market Street
San Francisco, California

ROBERT H. HEIDERSBACH
222 Colorado National Bank Bldg.
Denver 2, Colorado

FRANK N. VICKREY
3217 Montrose Blvd.
Houston 6, Texas

TED R. TRAUTMANN
2010 South Utica
Tulsa 4, Oklahoma

Model 80-D
2½ yd. Capacity

Every NORTHWEST a ROCK Shovel!

Here again you see *more* installations of Northwests in rock. Every Northwest is a *real* Rock Shovel because Northwests bring you the advantages that *make* a real Rock Shovel.

Model 41
1 yd. Capacity

The Northwest Dual Independent Crowd that utilizes force most independent crowd shovels waste, the "Feather-Touch" Clutch Control, the Cushion Clutch, Northwest design and construction and other Northwest features all combine to give high output in tough digging. And, if you have a *real* Rock Shovel you never have to worry about output in *any kind* of digging.

NORTHWEST ENGINEERING COMPANY
1515 Field Building, 135 South LaSalle Street, Chicago 3, Illinois

Model 6
1½ yd. Capacity

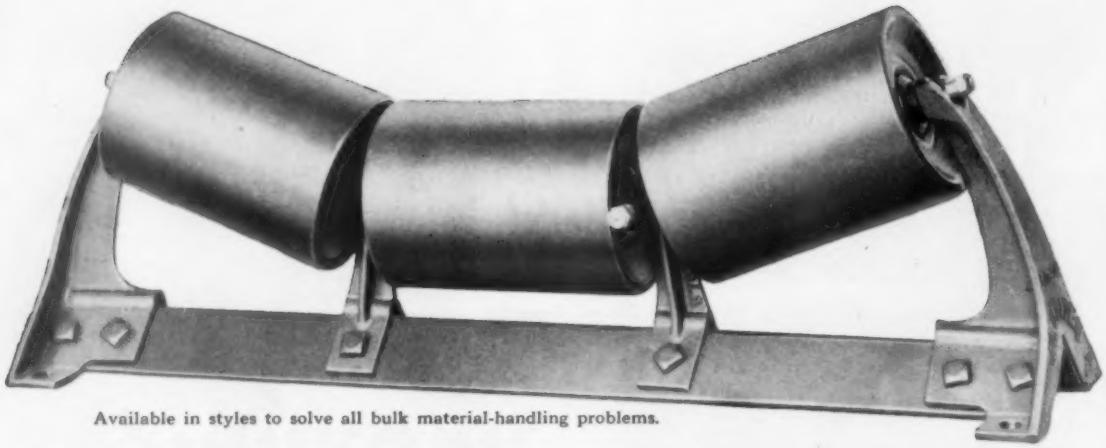
Model 25
¾ yd. Capacity

NORTHWEST

CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

THE GREATEST COMBINATION OF PROVED ADVANTAGES EVER BUILT INTO A SHOVEL, CRANE, DRAGLINE OR PULLSHOVEL

GS 22 SG

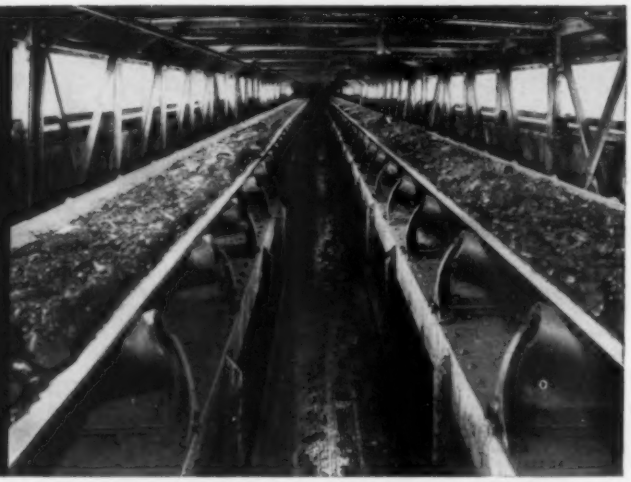


Available in styles to solve all bulk material-handling problems.

for heavy handling under adverse conditions

JEFFREY BELT IDLERS

Jeffrey idlers awaiting installation on a cross-country coal conveyor from mine to power plant . . .



and at work on a heavy hauling job.

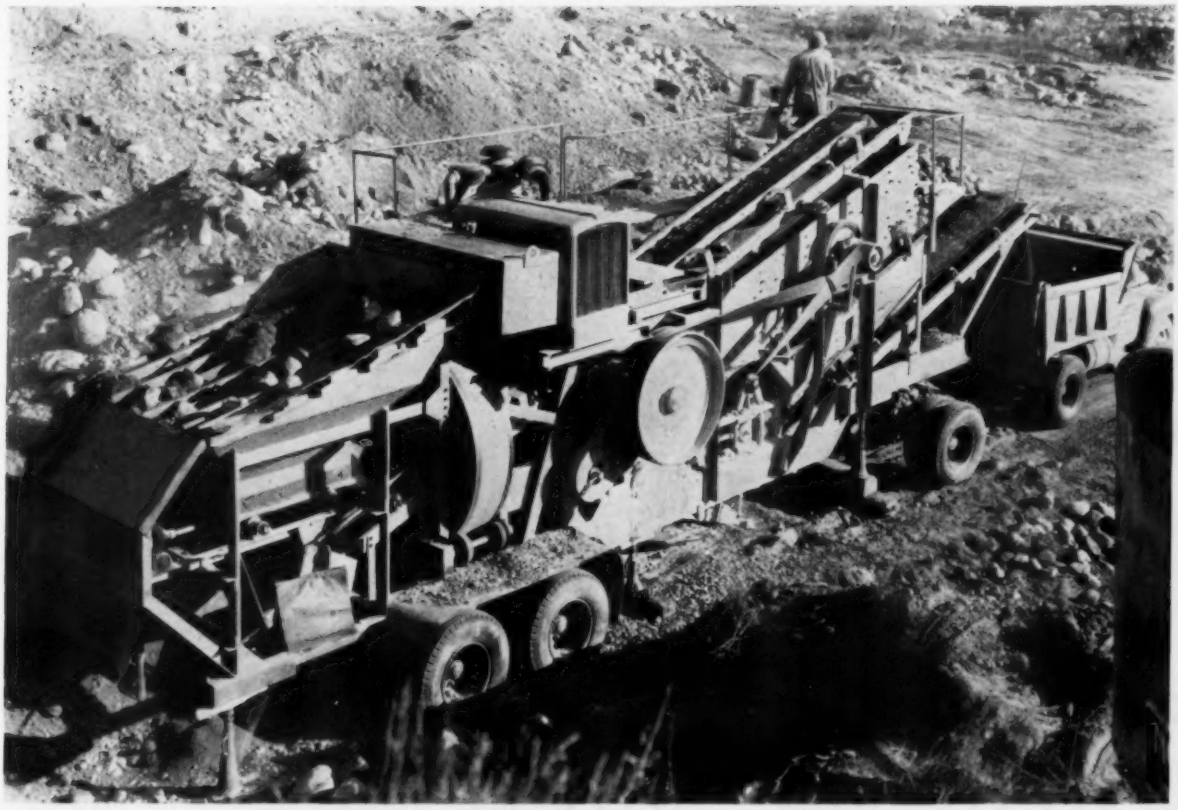
Jeffrey idlers offer every feature essential to belt protection, dependability and long service. Equipped with roller bearings, these idlers assure maximum efficiency and economy of conveyor belt operation.

The outer shell of the rolls is made of high-quality steel tubing, into which the ends are carefully centered and welded, forming a one-piece balanced roll. Corners are rounded to prevent injury to the belt. The sturdy, malleable-iron stands are die straightened to assure proper alignment and snugness of fit.

All parts of the Jeffrey idler are interchangeable. Idlers and parts are always available, ready for shipment from factory or distributor stock. The Jeffrey Manufacturing Company, Columbus 16, Ohio.

JEFFREY

CONVEYING • PROCESSING • MINING EQUIPMENT •
TRANSMISSION MACHINERY • CONTRACT MANUFACTURING



Pit-run material being shovel loaded into hopper of Diamond 66 plant. Hopper is equipped with grizzly for scalping and plate feeder for regulating flow to plant conveyor. D-449

Built to keep you in business . . . at a profit

DIAMOND PORTABLE Rotor-Lift Crushing Plants

Here's how this modern equipment . . . providing uniform crush under all conditions . . . can keep you on the profit road month after month . . .

- **line-flo system moves material through plant without delay—no extra scalpers, no by-passes, no bottlenecks.**
- **rotor-lift recirculates material fast, distributes it without batching or bunching on feed conveyor.**
- **long jaw design of jaw crusher handles the hardest of rock, gives maximum size uniformity.**
- **high speed roll crusher steps up output by eliminating reruns through jaw crusher, has high capacity for its weight, requires low h.p. per ton produced.**
- **balanced vibrating screen does thorough job of separating materials without clogging, can be depended upon for long, trouble-free service.**
- **belt conveyors run on antifriction bearings, move material quickly and smoothly.**

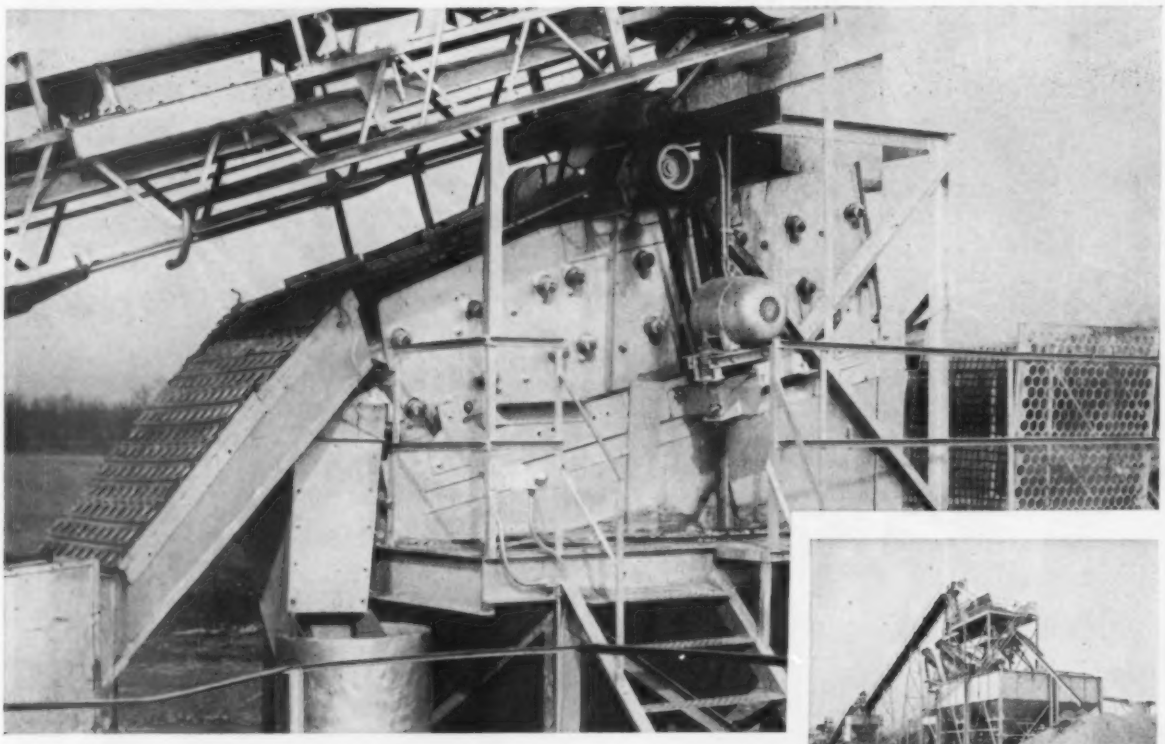
Add to these advantages the well-known Diamond full maneuverability for road or pit. And . . . remember . . . every one of the five Diamond Rotor-Lift Plants out-produces all other machines in its class. In fact it regularly exceeds its own rating. No wonder your Diamond is bound to be a money maker for you.

Before you decide . . . see Diamond.

A Diamond portable plant is always ready for the road, meets highway requirements in all states. D-406

DIAMOND IRON WORKS
division
GOODMAN MANUFACTURING COMPANY
Halsted Street and 48th Place • Chicago 9, Illinois

Everything For The Aggregate Producer
Jaw Crushers • Roll Crushers • Conveyors • Screens and Washers • Feeders and Bins • Portable and Stationary Crushing Plants For Rock and Gravel



Above, 6-year-old Deister Scalper owned by Bill and Dale Miller. Inset, Miller Bros. modern steel tipple at West Milton.

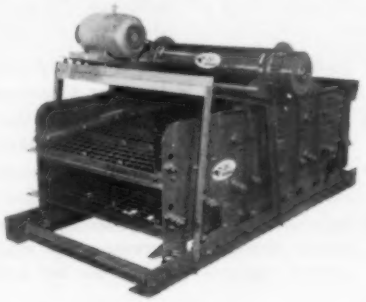
"1,000,000 tons over this Deister in 6 years...repair costs *15c per 1,000 tons!*"

That's what William H. (Bill) Miller of Miller Bros., West Milton, Ohio, has to say about his six-year-old Deister 4 x 10 double-deck Scalping Screen. He continues, "Our Deister has done a great job for us. Every bit of material we size is first sent across our Deister Scalper. The Deister makes finished stabilizer and sizes all of the aggregate before it goes into the washer. It can take up to 120 tons of raw feed or backrun gravel per hour. In addition, it handles the recirculating load from the two crushers that has run as much as 70 tons per hour. All told, we figure that we have run over 1,000,000 tons across this screen.

We figure replacement and repair costs on this machine at approximately 15c per 1,000 tons. After six years of hard service, we think this is a hard record to beat . . . real proof that Deister Screens are ruggedly built to run day after day, year after year without downtime."

If you are expanding or modernizing your operation, you, too, can benefit from such *exclusive* Deister features as Adjustable Slope Panels (independently adjustable at both feed and discharge ends to increase or decrease screening angle) . . . Unitized Life-Time Vibrating Mechanism . . . Opposed Elliptical Throw controls material movement on screen for greatest sizing speed and efficiency. Write Deister for recommendations on your screening problems.

Below, Model UHS double-deck Deister Vibrating Screen, features side or transverse tension. Available in 3, 4 and 5 ft. widths; 10, 12, 14 and 16 ft. lengths; single, double, and triple decks.



Deister Vibrating Screens give maximum protection against downtime... assure maximum production to rigid specifications.

DEISTER MACHINE COMPANY
1933 East Wayne Street, Fort Wayne 4, Ind.

Higher Tonnage at Lower Cost with . . .

BECAUSE OF . . .

- **SIMPLICITY OF DESIGN**

Compact—no belts or pulleys

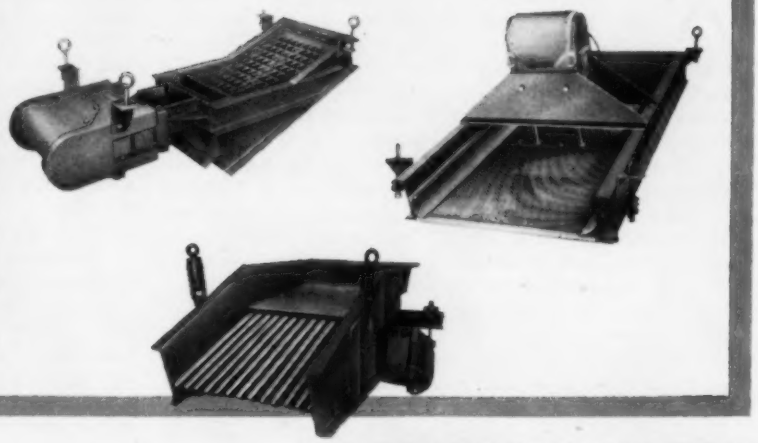
- **ELECTROMAGNETIC DRIVE**

Continuous, trouble-free operation.

- **VARIABILITY OF FEED RATE**

Instantly controllable feed rate —from minimum to maximum

SYNTRON Electromagnetic VIBRATING SCREENS



DOUBLE SERVICE — both feed and screen

These heavy duty SYNTRON Vibrating Screens are designed for durable service—both feed and screen in one operation. Feeding coarse materials to hammer mills, crushers, etc., at the same time screening out the fines to prevent clogging of operations. Constructed to withstand abuse of impact loads of stone or heavy rock day after day, without noticeable damage. SYNTRON Electromagnetic Vibrating Screens with controlled feed rate delivers higher output with more effective separation. Designed and built for easy, low cost maintenance, long dependable trouble-free service.

Model F-55 Grizzly Discharge Feeder padding the belt with fine to protect it from rock.

Other SYNTRON Equipment of proven dependable Quality

TEST SIEVE SHAKERS

Provide fast, accurate, uniform sizing of test materials. Equipped for accurate time testing.

HOPPER LEVEL SWITCHES

Automatically maintains maximum or minimum amount of materials in bin or hoppers.

a-c to d-c POWER CONVERSION UNITS

Low cost a-c to d-c power conversion in one package—saves floor space — eliminates costly maintenance. Contains heavy-duty Selenium Rectifiers—automatic voltage regulator.

Write for catalog data — FREE

SYNTRON COMPANY
385 Carson Avenue Homer City, Penna.

The Editor's Page

Zoning and Public Relations

AT the recent combined conventions of the National Sand and Gravel Association and the National Ready Mixed Concrete Association in Los Angeles many things of great importance to producers were discussed, including the 13-year highway program which assures aggregates producers of as many years of record demand. Of even greater importance to these producers, however, was the information presented on the subject of zoning, which threatens the very existence of these industries, and the related subject, community relations. Some producers have already been zoned out of existence; others have been forced to move to new locations, at great expense and to their competitive disadvantage. Still others have won temporarily but can not be sure they will win the inevitable succeeding rounds.

Producers who are now located near residential areas and have not had zoning troubles are almost sure to have them eventually. Others who are now fairly remote from restricted areas can never tell when housing developments will bring zoning laws and other restrictive legislation to them. In short, every producer of sand and gravel, crushed stone, agricultural limestone, silica sand, cement, ready-mixed concrete, bituminized aggregates, etc., should realize that zoning is, or sooner or later will be, a threat to his own business, and he should take every possible measure to counteract it.

At earlier meetings of the N.S.G.A. and other associations, much sound advice has been given on how to defend against existing zoning pressures and, for those not yet affected, what to do to stave off possible pressure. At the latest convention, however, the growing urgency of this problem caused it to be given one entire joint session. A feature of this session was the report of the Committee on Public Relations, in which the past interest of the association in zoning and land rehabilitation was reviewed and its future work in promoting good public relations was outlined. A public relations counsel has been engaged jointly with N.R.M.C.A., and with the association staff he will prepare three publications. The first is a booklet on *How to Conduct a Sand and Gravel Plant Open House,* which will soon be distributed to the membership. This provides the company which chooses to use it the earliest possible favorable contact with the public.

The second publication will be a compendium of papers and speeches on zoning and land rehabilitation which have been circulated to the association membership in past years. The third publication will be an ambitious project dealing with those laws which have contributed to the orderly development of the sand and gravel industry, along with competing land use. It will be designed to be suitable for distribution to public officials concerned with planning and zoning. After these three projects are completed, two others will be tackled. One is to be an evaluation of the role of the sand and gravel industry in our economy. The other will be an attempt to provide guidance in the troublesome trucking problem.

Earlier the N.S.G.A. Committee on Public Relations had determined by an association-wide survey that zoning is a serious problem and had taken a number of important steps to combat pressure. An important item was the preparation of a "check list" entitled *Preliminary Recommendations on Zoning Regulations and Other Community Relations Problems.* There it was pointed out that:

"If zoning laws have not yet been enacted in your area, or if existing laws have not been a hardship, this is an opportune time to develop an active program for emphasizing the essential economic role which your company plays in the life of the community. Such a program, undertaken before any conflict develops between your operations and zoning regulations, should enable you to make an effective case against harsh and unreasonable restrictions which might be later proposed.

"Make your company's program for better community relations an active, well-planned one which will visibly demonstrate to your community that there is no need to restrict your operations, but in fact that your company is essential to the continued development and prosperity of the area in which you are located."

In the check list it is also emphasized that "The first goal of your community relations program should be to inform the public of the nature, problems, and especially the necessity of your operations to the community. Many people are relatively unfamiliar with the sand and gravel industry. A common misconception is that sand and gravel can be found anywhere and that termination of your operations by zoning regulations at one site will not produce a burdensome problem of prospecting and relocating your business at another site. . . One reason for the common unfamiliarity with these facts is the lack of effort on the part of sand and gravel producers to educate the public."

The creation of good-will, it was pointed out, requires first the elimination of objectionable features, such as noise, dust, odors, unsightliness, and hazards to children and others. With this accomplished, full attention can be given to the improvement of relations between the company, its near neighbors, and the community in general by more direct means.

All of the work that has been and is being done by these associations is intended to provide the members who choose to use it with the best information and advice obtainable. It must be remembered, however, that the intelligent and responsible application of that advice can only be made locally. Nothing can supplant the need for each producer to conduct his business with a sense of public responsibility.

Walter E. Trauffer

Whether boom lengths are short (50′) or long (110′), full engine power means smoother operation. For best results, use *Texaco Ursa Oil Heavy Duty*.

ENGINE POWER can make a big difference in getting yardage out. And full power from an engine depends heavily upon its lubrication.

Today, countless contractors rely on *Texaco Ursa Oil Heavy Duty* to keep their shovels, cranes, draglines, crushers and trucks running smoothly . . . with greater efficiency, less maintenance cost. They've found that *Texaco Ursa Oil Heavy Duty* helps prevent wear, corrosion, and harmful deposits. Valves and rings stay free—assuring full compression and complete combustion. This means *more power* with *less fuel* and *longer periods* between overhauls.

For hydraulic mechanisms, use *Texaco Regal Oil R&O*. It prevents rust, sludge and foam—assures maximum efficiency and lower maintenance costs.

Use *Texaco Crater* or easily applied *Texaco Crater X Fluid* on wire ropes and open gears. They keep rope strong longer, greatly prolong gear life.

A Texaco Lubrication Engineer will gladly help you draw up an economical and effective lubrication program for all your equipment. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N.Y.

TEXACO

TEXACO Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

TUNE IN . . . METROPOLITAN OPERA RADIO BROADCASTS EVERY SATURDAY AFTERNOON

Washington News Letter

BECAUSE their principal concern has been the fear of inflation, the slight business downturn evident since about the beginning of the year has actually caused government economists to breathe a sigh of relief.

Although, for the most part, business has been maintained at a very rapid pace, there have been the following signs of a slackening:

1. A decline in automobile sales below the record of last year, which in turn was well below the 1955 record.
2. A drop in new orders for machine tools.
3. A more than normal decline in business loans.
4. A drop in the prices of a number of sensitive commodities, such as steel, scrap, and copper.
5. A decline in railroad car and truck loadings from the same time last year.
6. A rather sharp stock market decline since the turn of the year.

In addition, there has been a significant decline in what are normally regarded as capital expenditures. In this connection, a number of companies have announced postponement in their expansion plans, and housing starts have declined again, so that in January, 1957, they are running at about 10 percent below the January, 1956, figure.

It is these forces which have been leading government economists and other officials to the conclusion that the worst of the runaway inflation fears are over. Although there is always the possibility that such mild beginnings of a downturn may be only the forerunner of a more serious recession, these persons really do not appear to believe that any large-scale recession is possible at this time. In assessing the overall outlook, they apparently see nothing ahead but continued high-level prosperity. It may be a prosperity which is a little less frantic than we have been accustomed to, but prosperity, nevertheless. Nor are the government economists alone in this appraisal of the situation. In testimony offered recently in connection with the government's Economic Report, a number

By S. HERBERT UNTERBERGER

of economists associated with private industry, universities, etc., almost unanimously supported the conclusions found in that report.

The basis for this optimism is found in the following array of factors:

1. Consumer demand, which has been the key to a good part of our post-war prosperity and was almost the lone factor which prevented the 1953-54 recession from assuming serious proportions, is expected to continue very strongly in 1957. This is because persons have more money than ever before, and the population continues to increase. Furthermore, preliminary consumer surveys made for the Federal Reserve Board show that consumer buying will probably continue to be strong this year. These surveys which have been made for several years now have shown their accuracy as indicators of future demands.
2. The next factor is government demand, which for well over a generation has been growing in importance and by now is one of the most significant factors in estimating future business acitvity. Fortunately, the volume of federal, state, and local spending can be estimated with reasonable accuracy. Such government spending is certain to rise in the next year. The expanded school and highway building programs provide virtual assurance of this development.
3. The next component is investment demand. Although it appears that there will be a decline in housing starts, and that new business investment in plant and equipment may decline somewhat, total investment in such capital goods is not expected to fall in 1957 and may even be a little above the 1956 level. The explanation of these apparently contradictory conclusions is that 1957 will see the continuation and in some cases the completion of investment programs begun in earlier years.
4. Finally, there is foreign demand, which is generally expected to stay strong unless the oil crises in Europe reach magnitudes greater than are now anticipated.

These are the optimistic signs, which in the opinion of government and other economists, are more than sufficient to offset the deflationary forces previously enumerated. Thus, it appears that the even keel long sought by economic planners may actually be being accomplished, at least for short periods of time. And this is being done without direct intervention into the detailed affairs of particular business enterprises. It is being accomplished principally by the use of monetary controls which have a generally pervasive influence, rather than by the use of detailed controls over prices, wages, and other economic factors.

To be sure, these overall controls bear unevenly on various businesses. The particular concern has been with small businesses and the construction industry, where small changes in interest rates have a very substantial effect on their accessibility to credit. Despite these shortcomings of the overall monetary controls, they appear to be preferable and more generally acceptable than the detailed controls.

Specific controls over prices and wages again appear to have been rejected by the public and seen in the newspaper reaction to the trial balloon recently set off by the President in a press conference. At that time he suggested the possibility of requesting stand-by price and wage controls for use in connection with future emergencies. To his surprise and that of his advisors, the public and congressional reaction to this suggestion was most vocal, so that by now the idea is virtually dead. Although some planning is going on in Washington with respect to these matters, it is being carried forward on an almost secret basis, so as not to arouse suspicion and further strong reaction.

Nevertheless, the question still remains as to what would be done if the forces described at the beginning of this article grow so strong as really to result in the kind of downturn which is called a recession. Fortunately, by now the government, which has became the agency looked to in times of economic distress,

(*Continued on page* 159)

Convert Unsuitable Materials into

Specification Sand

BY processing rock, coarse aggregate, and unusable natural sand, the Allis-Chalmers rod mill gives you specification sand *where and when you want it*. It extends the life of natural deposits. It eliminates the expense and inconvenience of distant shipments.

Specification Flexibility

Meeting varying specifications with an Allis-Chalmers rod mill is merely a matter of changing feed, feed-water rate, or rod charge. Once mill is adjusted to produce a required product, it needs very little attention.

Cubical Product

Rod mill action breaks long, flat particles . . . knocks corners off rough pieces, yet does not produce an excessively smooth particle. Size distribution is excellent. Product is ideal for use in concrete.

"Manufacturing" sand is a particularly tough, abrasive operation. That's why you'll want the Allis-Chalmers rod mill. It's a rugged machine that has proven most economical for grinding sand — in terms of long life and low operating costs.

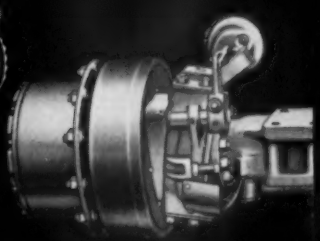
For complete information, see your A-C representative or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wis. Ask for Bulletin 07B6718A.

ALLIS-CHALMERS

A-5311

FROM TIMKEN-DETROIT®...

today's BROADEST RANGE OF PLANETARY AXLES



...both steering and rigid!

FOR HEAVY-DUTY SPECIAL EQUIPMENT AND TRUCK APPLICATION

The Timken-Detroit family of advanced design axles now includes a complete range of new planetary heavy-duty axles—with a steering axle operationally matched to each rigid axle in the line.

Versatility, ruggedness, and almost unlimited gear reductions make these new planetary axles the leaders in their line. They are going into use in practically every corner of the world on heavy-duty two- and four-wheel drive prime movers, husky off-road rock and earth wagons, big four-wheel tractors, mining equipment, heavy-duty scrapers, front-end loaders and many other units of heavy-duty equipment.

Years of TDA® research and development have brought these new and exclusive planetary outer-end features: floating ring gears—concentrically mounted ring gear hubs—full-flow lubrication of all bearings and planet gears—special forged bronze planet pinion pins—and an unusually high degree of parts interchangeability. For the newest and finest in planetary axles—depend on Timken!

Only New Timken® Full Planetary Design Brings You These Features for Extra-Long Life, and Extra Dependability:

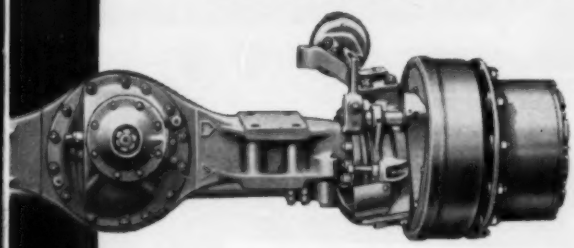
1. NEW FLOATING RING GEAR and hub are two separate pieces. Ring gear is free to float radially. This feature, combined with floating sun gear, assures equal distribution of stresses to all planetary gears, gives longer, trouble-free gear life.

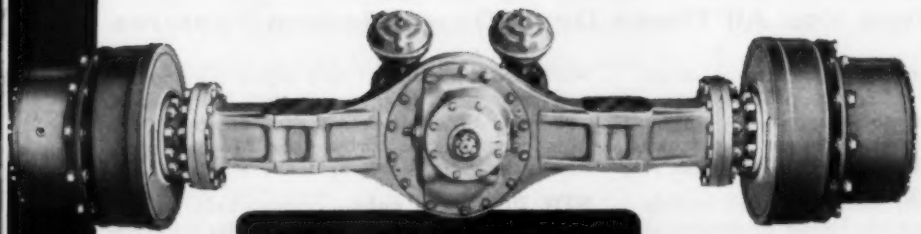
2. CONCENTRICALLY GROUND RING GEAR HUB AND SPINDLE MOUNTING SURFACES ground around a common center assures perfect alignment and fit—plus freedom from bending forces on the hub and spindle splines. Splines absorb only torsional stresses from the ring gear and transmit them to the housing.

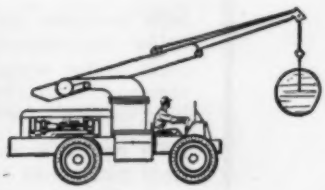
3. SPECIAL FORGED BRONZE PLANET PINION PINS of premium alloy bronze for longer, trouble-free operation. Rifle drilled lubrication channels and machined lubrication flats assure full time lubrication. When cover is assembled pin is locked in place to prevent rotation—resulting in longer pin life.

4. FULL-FLOW LUBRICATION design of Timken planetary axles assures constant flow of lubricants to wheel bearings and all planet gears while vehicle is in operation. Wheel hub and planetary spider pick up oil in the cast reservoirs as they rotate and channel it to all moving parts. When vehicle is not in motion oil is retained in these chambers providing ample initial lubrication.

5. HIGH DEGREE OF PARTS INTERCHANGEABILITY between both rigid and steering axles in the same series. This means a smaller parts inventory, low maintenance costs and more productive time with Timken planetary axle equipped vehicles.







TIMKEN Detroit AXLES

TIMKEN-DETROIT AXLE DIVISION
ROCKWELL SPRING AND AXLE COMPANY
ASHTABULA, OHIO

The Accepted T D A Standard
TRADE MARK REGISTERED

Plants at: Detroit, Michigan • Oshkosh, Wisconsin
Utica, New York • Ashtabula, Kenton and Newark, Ohio
New Castle, Pennsylvania

WORLD'S LARGEST MANUFACTURER OF AXLES FOR TRUCKS, BUSSES AND TRAILERS

©1957, RS&A Company

New '57 Fords

New T-750 tandem truck, 37,000-lb. GVW. High Torque 212-hp V-8 engine, 4-barrel carburetor and Master-Guide power steering, standard.

Only Ford Gives You All These Deep-Down Modern Features

NEW Styleside pickup bodies, standard at no extra cost. America's biggest pickup bodies! Built wider with all-steel rugged box-section corner reinforcements and recessed taillights. Side loading's far easier with full-width body.

NEW hydraulic clutch, standard in all models from pickups to tandems. Easier to operate—works like hydraulic brakes. Clutch and brake pedals are suspended type for extra driving ease!

NEW riding comfort! A completely new chassis suspension, roomy cabs with increased visibility, greatly improved riding and handling ease.

NEW power advances! New higher horsepower, new freer breathing, new higher compression, new Super-Filter air cleaner. New advancements from camshafts to carburetors. Modern Short Stroke design in every engine—V-8 or Six.

NEW Driverized cabs—completely new—stronger, roomier, smarter! New wider full-wrap windshield. New inboard cab step, new Hi-Dri ventilation, new easy-to-read instrument panel!

NEW chassis strength! New frames, up to 13% stronger. New sturdier axles! New higher capacity, easier riding springs!

More modern in more ways

...to cut your costs!

NEW F-600 2-tonner has higher horsepower and more rugged chassis construction. More payload capacity than any other 2-tonner.

NEW F-100 pickup with Styleside body, standard at no extra cost. Flareside body with wood floor also available. Both types in either 6½- or 8-foot body lengths.

Boldly modern! That's the *big* news in Ford trucks for '57. Modern styling outside—modern engineering through and through. They're the most *efficient* Fords ever built—engineered to cut your costs.

Look at Ford's new Extra Heavy Duty tandem models. They're at home with any load, anywhere! See the money-saving Medium Duty models . . . the most versatile trucks Ford has ever built. And Ford's new pickup with its smart-looking Styleside body gives you the biggest capacity in the half-ton field—*standard at no extra cost!*

Under the hood of a '57 Ford, you'll find important new advances in power. Engine breathing is freer, more efficient. And every engine—V-8 or Six—offers the cost-cutting benefits of Ford's modern Short Stroke design.

New Driverized Cabs are roomier, more comfortable than ever. And new structural design improvements make these the strongest Ford Cabs ever built.

Deep down it's a rugged truck, too! There's new toughness everywhere—in stronger frames, in sturdier axles, in higher-capacity springs.

One look at these completely new, boldly modern Ford trucks for '57 will make you want to see just what they can do. Contact your Ford Dealer now!

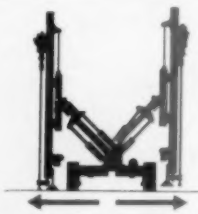
FORD TRUCKS COST LESS

. . . LESS TO OWN . . . LESS TO RUN . . . LAST LONGER, TOO!

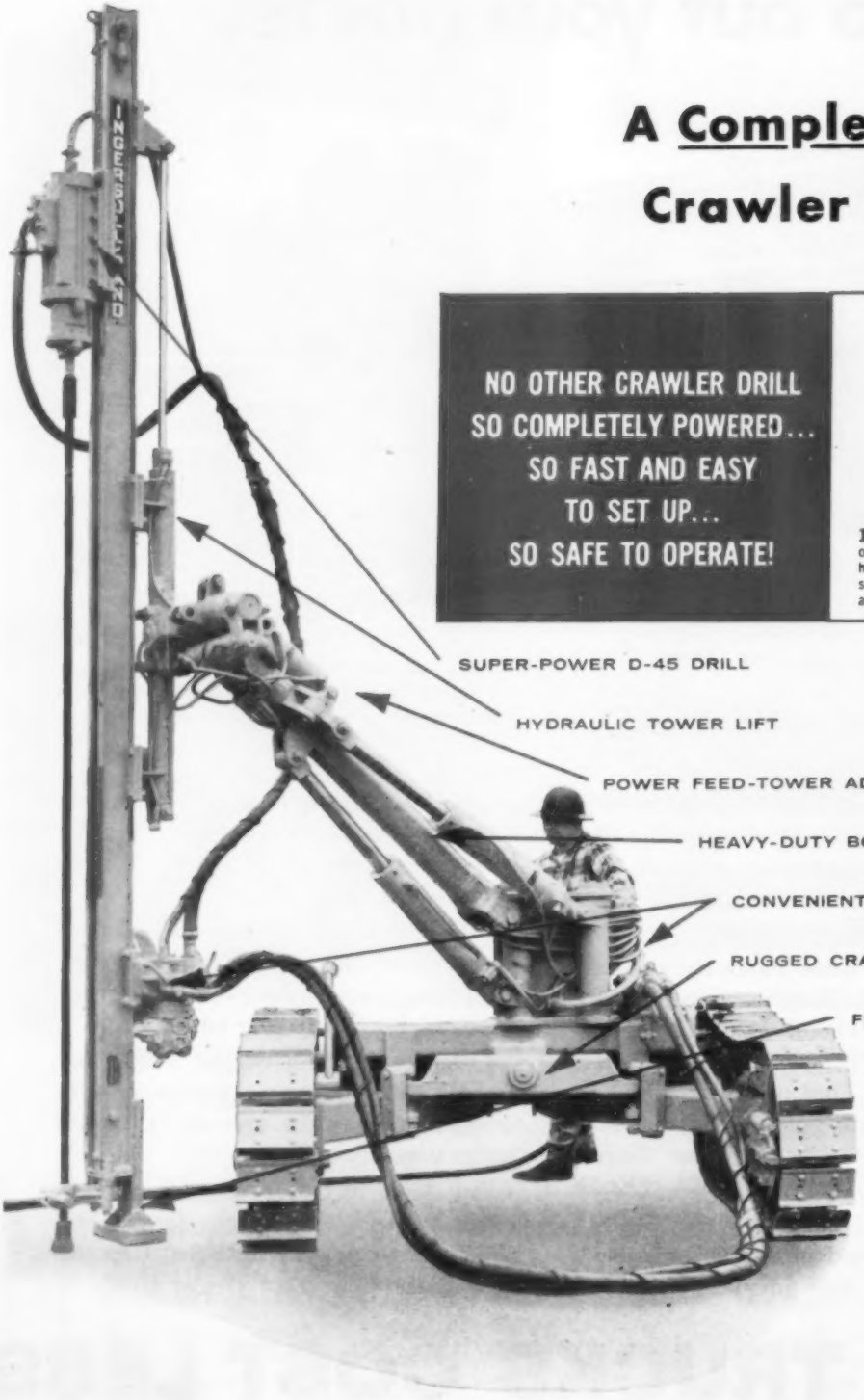
Announcing the

A Completely New, Crawler Drill at its

NO OTHER CRAWLER DRILL SO COMPLETELY POWERED... SO FAST AND EASY TO SET UP... SO SAFE TO OPERATE!



1. Hydraulic Boom Swing of 9'11" gives maximum usable hole pattern with a single crawler setup and permits line hole drilling along a face over the tracks.



MAXIMUM FLEXIBILITY WITH COMPLETE SAFETY

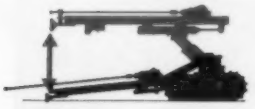
FOR A PACE-SETTING DRILLING COMBINATION,

Ingersoll-Rand

CRAWL-IR

Completely Mechanized

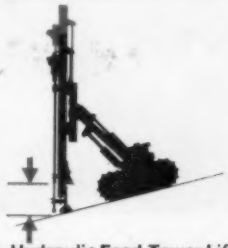
RUGGED BEST!



2. Hydraulic Boom Lift raises and lowers booms in vertical plane—covers distance of 7'3" with tower in horizontal position.

3. Hydraulic Feed-Tower Tilt sets feed tower at any angle.

4. Hydraulic Feed-Tower Swing sets tower for vertical drilling on any slope—or positions drill for horizontal holes at any angle to crawler travel.



5. Hydraulic Feed-Tower Lift slides feed tower up or down, in or out—permitting foot pad to be set firmly on the ground.

HERE, in one unit, is a completely mechanized and self-propelled heavy-duty crawler drill that will greatly expand the scope of Wagon Drill operations. With *all* boom and feed-tower adjustments hydraulically controlled, you can make faster, safer and easier setups for drilling in *any position*. And because the CRAWL-IR can tow its own portable compressor, you save manpower and release auxiliary equipment generally required to move drills and compressors on the job.

The following advantages and features make this the fastest-acting, easiest drilling and safest unit of its type ever developed. It can be supplied with percussion or rotary drills, and with a wide range of optional hydraulic combinations when all of the power features are not required. Ask your I-R representative for complete information on this new self-propelled blast hole drill—or send for a copy of Bulletin No. 4189.

ADVANTAGES

SELF-PROPELLED – The CRAWL-IR is powered by two independently controlled heavy-duty piston type I-R air motors. Knee-action frame construction permits these motors to take the crawler over rugged terrain.

SPEEDS SETUPS – Five hydraulic cylinders quickly and safely position and lock the feed-tower in position by manipulation of convenient controls located on the boom base.

FAST STEEL HANDLING – Reverse rotation in the powerful D-45 drill when used with coupled steel provides a convenient and easy method of adding and removing steels in a hurry. The D-45 also incorporates release rotation which permits hammer action on the steel for loosening joints and fighting stuck steels.

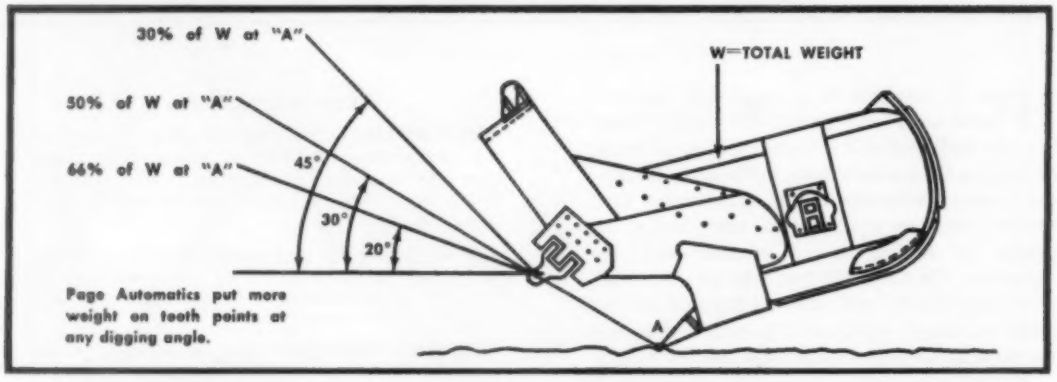
MORE DRILLING TIME – The bulk of the time formerly spent on conventional Wagon Drills in moving, hand wrench time and steel handling is now turned into drilling time. With the drill positioning completely mechanized one man operation is entirely feasible.

Ingersoll-Rand

11 Broadway, New York 4, N.Y.

POWER THE **CRAWL-IR** WITH A **GYRO-FLO** COMPRESSOR

And it's DISTRIBUTION of WEIGHT That Makes A Bucket Dig



Regardless of all other arguments, the only practical way to judge and buy a dragline bucket is on its *digging ability*. If a bucket won't dig, or digs with difficulty, it is a poor investment in production.

Balance—the distribution of weight—is an important factor in a bucket's digging efficiency. The more weight concentrated on its tooth points ("A" in drawing) at the first pull on the loadline, the better the bucket will dig. Because Page Automatics are designed and built so that a greater percentage of their total weight is concentrated on the tooth points *at any loadline angle*, they are recognized as the best digging bucket on the market.

We can prove that a Page Automatic will out-dig and outperform ordinary old style buckets and increase yardage up to 25% *on your own machine*. Ask for details on a demonstration today. *Write for Bucket Catalog GPB554.*

PAGE ENGINEERING COMPANY
CLEARING P.O. — CHICAGO 38, ILLINOIS

Page

Automatic Dragline Buckets
Walking Draglines

If it's a PAGE... *It* DIGS

B-3109

A big step forward in backhoe application...

SHAWNEE "CHIEF" or "WARRIOR"

MOUNTED ON 4 WHEEL DRIVE TRUCK

Sold as a complete unit or for your truck

- "Push-Pull" Power.
- Digs 14 to 15 ft. deep.
- Three 120° quadrants of operation, adjustable from operator's position.
- Hydraulic system driven from separate power take-off from truck transmission.
- Ideal for digging in rough terrain.

SHAWNEE "WARRIOR"
WITH "PUSH-PULL" POWER. Digs 12 ft. deep. Three 120° quadrants of operation, changeable from operators position, totaling 170° range.

SHAWNEE "SPECIAL" LOADER
2,000 pound lift to 9 feet dumping height. Two-pin mounting enables removing or mounting on the tractor in 5 minutes time. Many attachments available.

SHAWNEE "KAW" LOADER
Ten cubic ft. roll-back bucket. Hoists 1250 lbs. to 9 ft. dumping height. Twin, double acting bucket cylinders. Installs or removes in 15 minutes.

SHAWNEE MAKES THE WORLD'S MOST COMPLETE LINE OF LIGHT INDUSTRIAL EARTH-MOVING TRACTOR ATTACHMENTS

886

For Complete Information, write:

SHAWNEE MANUFACTURING COMPANY, INC.

1947-CP North Topeka Ave., Topeka, Kansas

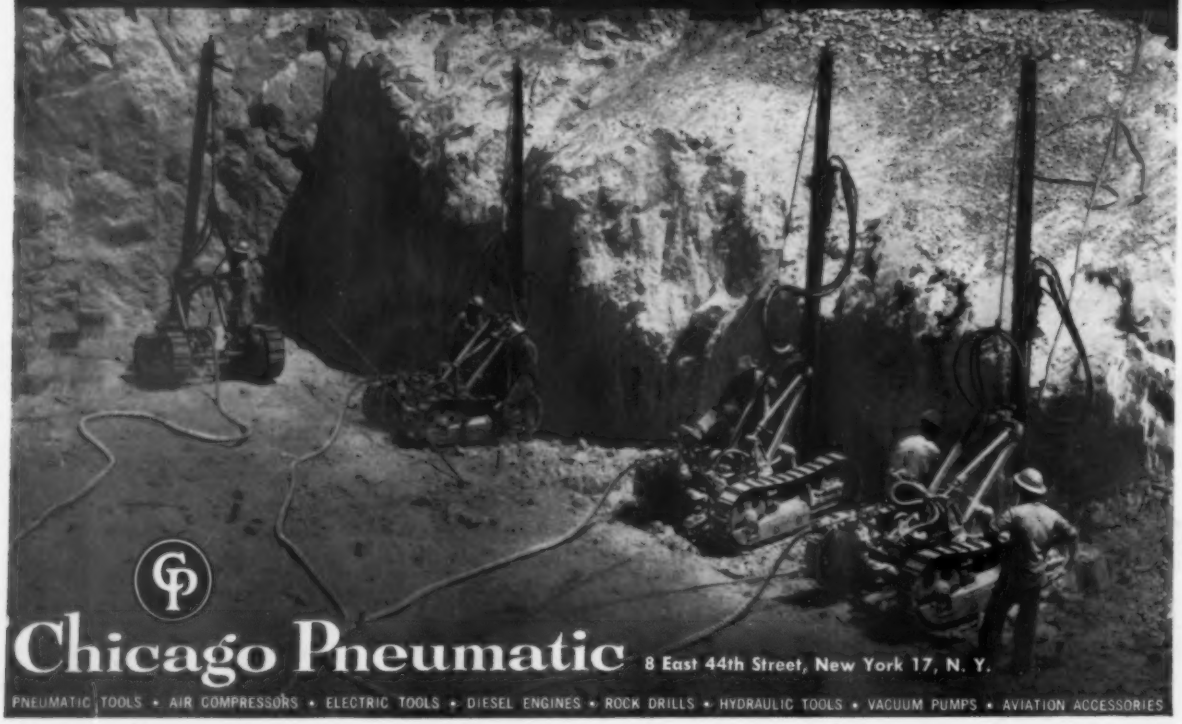
here

there

everywhere

the G-800 TRACDRIL!

The self-propelled CP Tracdril pivots . . . moves forward or backward and can turn in its own length! "Tracdril" has a hydraulically actuated U-arm for fast drill carriage positioning. Can tow a 13,000 pound compressor up a 10% grade. Its "knee action" crawler tracks take rough terrain in stride. You save time moving from hole-to-hole, get more accurate spotting and gain productive drilling time.



Chicago Pneumatic 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES • ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

News of the Industry

Lawrence Kittle Elected To Succeed Sunderland As Ash Grove President

The election of Lawrence Kittle as president of the Ash Grove Lime & Portland Cement Company has been announced by Paul Sunderland, chairman of the board. He succeeds Allan B. Sunderland, who died on December 30.

Lawrence Kittle

A native of Topeka, Mr. Kittle joined Ash Grove in 1919 as a clerk at the company's cement plant in Chanute, Kans., following overseas army service in World War I. In 1920 he was transferred to Ash Grove's general office in Kansas City.

He became auditor in 1923 and treasurer in 1941. In 1945 he was elected vice-president and treasurer, and in 1950, executive vice-president. In the latter capacity he was in charge of accounting, finance, and labor relations.

Ash Grove manufactures portland cement in Chanute, Kans., and Louisville, Nebr., and lime in Springfield, Mo.

The Ideal Cement Company, Denver, Colo., has begun construction on a new $14,000,000 plant at Ada, Okla. The plant will have an annual capacity of 1,500,000 bbl. of cement.

The Superior Portland Cement plant at Concrete, Wash., will furnish 350,000 bbl. of cement for the construction of the Upper Baker River Dam near Concrete. Another 350,000 bbl. will be supplied by the Olympic Portland Cement Company, Bellingham, Wash. About 2,000 cu. yd. of concrete will be poured each day, and a total of 2,630,000 cu. yd. will be required. The $27,000,000 project is scheduled for completion this year.

Coming Events

April 8-10, 1957—Dallas. 51st annual convention, Autoclave Building Products Association. Statler Hilton Hotel.

May 15-17, 1957—Hot Springs, Va. 22nd annual meeting, National Industrial Sand Association. The Homestead.

June 6-8, 1957 — Colorado Springs. Annual convention, National Lime Association. Broadmoor Hotel.

June 16-21, 1957—Atlantic City. 60th annual meeting, American Society for Testing Materials. Chalfonte-Haddon Hall.

July 11-13, 1957—Hot Springs, Va. Directors' meeting, National Crushed Stone Association. The Homestead.

July 29 - August 2, 1957 — San Francisco. World Conference on prestressed concrete. Fairmont Hotel.

August 25-31, 1957—Murray Bay, Canada. Semi-annual directors' meeting, National Sand and Gravel Association and National Ready Mixed Concrete Association. Manoir Richelieu.

Vulcan Materials Company, Newly-Formed Concern Plans Expansion Program

Approval of a multimillion-dollar capital expansion program at the first meeting of the board of directors of the newly-formed Vulcan Materials Company at Birmingham, Ala., was announced by Charles W. Ireland, president of the company.

The expansion program will include new plants and equipment, and a home office building containing 25,000 sq. ft. of office space to be built at Office Park, Mountain Brook, Birmingham, Ala. The office building is scheduled for completion in October.

Included in the other new facilities for Vulcan Materials Company are a prestressed concrete plant and new portable aggregate plants. All other existing equipment and facilities will be enlarged.

Vulcan Materials Company was recently formed by a merger of the Vulcan Detinning Company, Sewaren, N. J., and the Birmingham Slag Company and its subsidiaries.

Lone Star's Yearly Capacity To Go to 38,800,000 Bbl.

Lone Star Cement Corporation officials have indicated that they are planning for steadily rising production in their plants, to keep pace with the "age of concrete."

At the company's plant in Botetourt County, Va., a fourth kiln, added recently and now in operation, will increase the capacity to 10,000 bbl. per day. This plant has doubled its output in five years. The overall expansion plan, when completed, will raise domestic production to 38,800,000 bbl. per year.

Officials of the Lehigh Portland Cement Company plan to spend about $30,000,000 on new and improved facilities in 1957, according to an announcement made recently by Joseph S. Young, president of the firm. Mr. Young indicated that about the same amount was expended for expansion in 1956. He gave no specific figures on 1956 net income, but predicted that sales would surpass the $70,894,796 total of 1955.

Jan. Construction Activity Exceeds Jan., 1956, Total

New construction activity declined seasonally in January, 1957, to $3,000,000,000, but exceeded by 3 percent the previous January record set in 1956, according to preliminary estimates prepared jointly by the U. S. Departments of Commerce and Labor. On a seasonally adjusted basis, outlays for new construction in January were at an annual rate of $44,800,000,000, compared with actual expenditures of $44,250,000,000 in 1956.

Private construction declined 12 percent in January, reflecting a slightly more than seasonal decrease in both residential and nonresidential building. The $2,200,000,000 in total private expenditures, however, equalled the previous January high attained in 1956. Declines in housing, stores, and farm buildings were offset by over-the-year rises in the other types of private construction. New January records were set in outlays for industrial plants, office buildings, churches, schools, hospitals, and public utilities.

Public construction expenditures, in total, showed a less than seasonal decline of 4 percent from December, as new January highs were recorded in outlays for highways, public schools, and sewer and water projects. All types of public construction except industrial contributed to the 12 percent increase over January, 1956.

Six U. S. Cement Producers Report Higher Sales, Profits

Net income of the Ideal Cement Company for 1956 was $14,920,021, compared with $13,813,045 in 1955. Sales were up to $77,693,240 from $72,061,047 in 1955.

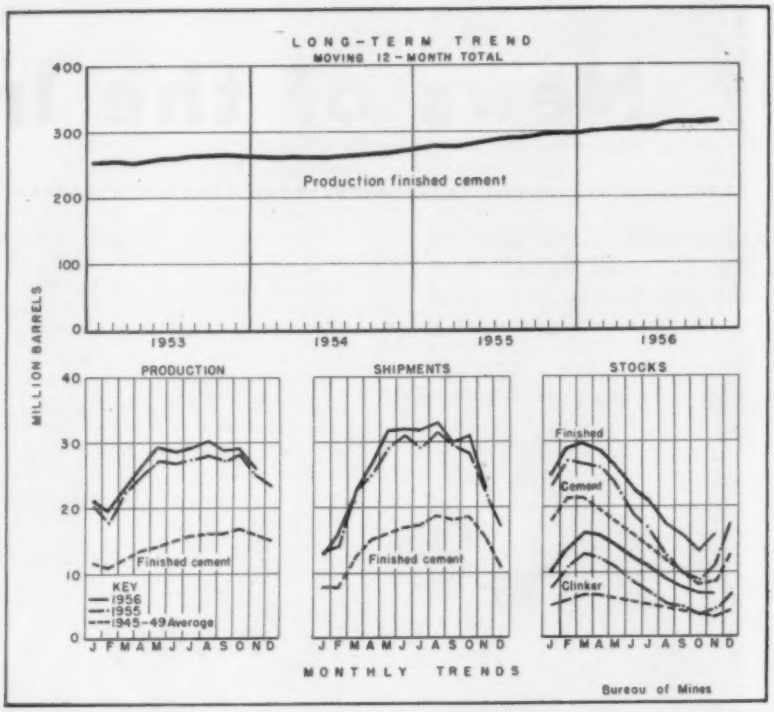
Marquette Cement Manufacturing Company officials reported receipts for the 12 months ended December 31, 1956, of $43,948,375, against $40,141,681 for 1955. Net income was $7,376,467 last year, against $6,114,674 in the preceding year.

According to D. S. MacBride, president of the Hercules Cement Corporation, sales of this company in 1956 will come to nearly $12,000,000, compared with $11,500,000 in 1955. Net income is expected to be a total of about $1,733,000.

Alpha Portland Cement sales during 1956 were reported to have been $35,420,777, against $31,224,259 in 1955. Net income in 1956 was $6,607,198, compared with $4,788,076 the previous year.

Net earnings of the Missouri Portland Cement Company for 1956 were reported at $3,828,523, against $3,009,039 the previous year. According to the annual report, net sales for the 1956 period came to $20,396,567, compared with net sales of $18,630,478 for 1955.

General Portland Cement Company's net profit in 1956 stood at $9,527,529, against $8,195,760 in 1955. Both sales and profits set new records last year. Sales amounted to $45,310,392, compared with $40,751,257 in 1955.



SUMMARY—Production of finished portland cement in November, 1956, as reported to the U. S. Bureau of Mines, totaled 25,874,000 barrels, an increase of 4 percent over the November, 1955, figure. Mill shipments in November, 1956, totaled 22,705,000 barrels, an increase of 5 percent over the November, 1955, figure. Stocks of 15,975,000 barrels of finished portland cement on hand November 30, 1956, were 37 percent more than on November 30, 1955. Clinker production during November, 1956, totaled 26,607 barrels, an increase of 4 percent over the November, 1955, figure.

PRODUCTION—One hundred and sixty (160) plants in 37 states and Puerto Rico reported a production of 25,874,000 barrels of finished portland cement during November, 1956, compared to 24,894,000 barrels in November, 1955.

Clinker production during the month of November, 1956, was 26,607,000 barrels compared to 25,618,000 barrels in November, 1955.

High-early-strength portland cement produced during November, 1956, totaled 1,204,000 barrels, an increase of 29 percent over the 932,000 barrels produced in November, 1955.

Prepared masonry cement produced in November, 1956, totaled 1,228,000 barrels, a decrease of 2 percent from the 1,259,000 barrels produced in November, 1955.

SHIPMENTS—Mill shipments of finished portland cement for November, 1956, totaled 22,705,000 barrels, compared to 21,682,000 barrels in November, 1955.

In November, 1956, shipments were higher in twelve (12) districts and lower in eleven (11) districts than in November, 1955. The greatest increases were in the Georgia-Florida and the Oregon-Washington districts. The greatest decreases were in the Indiana-Kentucky-Wisconsin and the eastern Missouri-Minnesota-South Dakota districts.

Mill shipments of high-early-strength portland cement in November, 1956, totaled 1,014,000 barrels, an increase of 18 percent over the 859,000 barrels shipped in November, 1955. Nearly half of these shipments were from mills in two (2) districts, eastern Pennsylvania-Maryland and Michigan. No shipments were made from mills in Puerto Rico.

Mill shipments of prepared masonry cement in November, 1956, totaled 1,020,000 barrels, a decrease of 3 percent from the 1,056,000 barrels shipped in November, 1955. Nearly two-thirds of these shipments were from mills in the northern states east of the Mississippi River. Prepared masonry cements are shown in 376-lb. barrels although they are sold in barrels of varying weights.

STOCKS—Mill stocks of 15,975,000 barrels of finished portland cement were on hand November 30, 1956—37 percent more than the 11,664,000 barrels on hand November 30, 1955. Stocks of clinker on hand November 30, 1956, totaled 7,346,000 barrels, an increase of 73 percent over the 4,236,000 barrels on hand November 30, 1955.

John W. Rockwood was elected vice-president of Basic, Inc., Cleveland, Ohio, at a recent meeting of the board of directors. Mr. Rockwood will be in charge of Basic's newly-ereated dealer-sales division.

The simple, effective, economical way to wash and classify material!

THE combination of equipment shown above is an Eagle Complete Washing-Classifying-Dehydrating Section. These Sections are designed to meet capacity and product requirements of any producer. They are a "package unit"; can be set down and integrated with any plant.

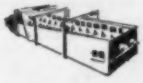
There is NO equipment or combination of equipment that comes even close, as far as ease of operation, economy and overall results are concerned. Eagle pioneered material washing and classifying and has the broadest experience in the field.

Material, in this case, is flumed to the Eagle Water Scalping-Classifying Tank. The power-operated valves assure removal of excess water, and classification within the tank by utilizing natural settling rate of particle sizes. Gated splitters below each valve, enable throwing desired percentage of each valve's bleed to multiple-cell Collecting-Blending Flume below splitters. The multi-cell Flume below the tank routes the desired gradations to three Eagle Screw Washer-Classifier-Dehydrators. They wash and further dewater the material, producing concrete sand, mason sand and plaster sand. Or, two screw units can produce concrete sand while one produces mason sand—any combination you want—utmost flexibility. The cost? Mere pennies per ton of material to meet specifications!

THE EAGLE LINE

COARSE MATERIAL WASHERS

FINE MATERIAL WASHERS



LOG WASHERS

WATER SCALPING—CLASSIFYING TANKS.

"SWINTEK" DREDGE LADDERS

CUTTER HEADS

COMPLETE DREDGES

BREAKER BALLS & PILE HAMMERS.

Send for YOUR Copy of new 44-Page Catalog 55.

EXPERIENCE, PROGRESS, SERVICE, SINCE 1872

EAGLE IRON WORKS

133 HOLCOMB AVE., DES MOINES, IOWA

James Savage Dies at 87—Founder, Board Chairman Of Buffalo Crushed Stone

James Savage, chairman of the board of the Buffalo Crushed Stone Corp., which he founded in 1904, died on February 7 in Buffalo, N. Y. He was 87 years old.

He was known in the crushed stone business throughout the country and had been secretary-treasurer of the National Crushed Stone Association for the last 25 years.

He entered the crushed stone business in 1904, founding Buffalo Crushed Stone. A few years later he was joined in partnership in the same company by the late F. W. Schmidt of Summit, N. J. After Mr. Schmidt's death, Mr. Savage remained in partnership with the Schmidt family. In later years, General Crushed Stone Co. of Easton, Pa., entered the partnership.

It was from this trio of owners that Frontier Industries, which later became Houdaille Industries, Inc., purchased Buffalo Crushed Stone in October, 1954. During most of his 53 years with the company, Mr. Savage was its secretary-treasurer. He retained that post until two years ago, when he became local chairman.

James Savage

Besides being active in the National Crushed Stone Association, with headquarters in Washington, he played a prominent role in the New York State Crushed Stone Association.

Brazilians Seek Japanese Aid To Erect Joint Cement Plant

The Joao Horeina Salles, a Brazilian financial group, reportedly has approached leaders of the Japanese cement industry with a proposal for building a joint Japanese-Brazilian cement plant in Sao Paulo.

According to Tokyo trade sources, the Rio Piloes Company, a subsidiary of the financial group, began the construction of a cement plant in Sao Paulo in 1950, using Italian material and technical assistance. Construction was subsequently halted, and the Brazilians are now seeking the help of Japanese capital and techniques. Investigation of the site may be undertaken by representatives of the Japanese cement industry, it was indicated.

For the last two years Japanese cement companies have been exploring the possibilities of a plan for building another joint cement plant near Recife, Brazil. Onoda Cement Company of Japan has sent over two survey teams.

Buford V. Everett, owner and president of Everett Quarries, Inc., Plattsburg, Mo., has been elected director and treasurer of the Missouri Limestone Producers Association. Mr. Everett served as president of the association in 1952.

SOMERSET STONE'S CHOICE FOR LOW-COST TOE-HOLE DRILLING

Brunner & Lay Rok-Bits and Drill steel

2½ and 3" carbide Rok-Bits are used on 24 ft. Brunner & Lay drill steel to drill toe-holes on 5 to 9 ft. centers, in 3 rows. These are located 4½ and 9 ft. above the floor. Bottom holes are angled downward, middle holes are perpendicular and top holes are angled upward. Request Bulletin B-1.

At right—Purchasing Agent, Geo. W. West and Superintendent, Frederic Dolsen.

Carbide Rok-Bits—cross, chisel, "X", cutaway, taper socket types—1¼" thru 6" gauge sizes.

Alloy or carbon drill steel.

Both vertical blast hole and toe-hole drilling methods are used at this rapidly expanding, 58 year old Bernardsville, N. J. operation. The quarry, developed on a hillside, penetrates a hard massive steeply dipping traprock formation (Triassic age) where toe-hole drilling is done with Brunner & Lay Rok-Bits and drill steel.

Rok-Bits® drill round, easy-to-load holes—provide better chip clearance; so bit works in rock, not its own cuttings—and offer deep seated, generous carbide inserts that stay put, to give you big daily footage at lowest cost. For details on this and other low-cost Rok-Bit applications, contact our nearest plant.

Brunner & Lay Products

Brunner & Lay, Inc., 9300 King St., Franklin Park, Ill. • Brunner & Lay Rock Bit of Philadelphia, Inc., 2514 East Cumberland St., Philadelphia 25, Pa. • Brunner & Lay of Los Angeles, Inc., 2425 East 37th St., Los Angeles 58, Calif. • Brunner & Lay, Inc., 150 Leslie St., Dallas, Texas • Brunner & Lay Rock Bit of Asheville, Inc., Sweeten Creek Rd., Asheville, N.C. • Brunner & Lay of Portland, Inc., 660 N. Tillamook St., Portland 12, Ore. • Birmingham Rock Bit Co., Inc., 5-18th St., S.W., Birmingham, Ala.

LINK-BELT Model "BA" Scalping Screens

save 65% or more of bearing replacement time

ONLY 2 BEARINGS!
LINK-BELT SCALPING SCREENS feature a two-bearing vibrator mechanism with a unique hydraulic bearing removal device for simplified maintenance. High-capacity, self-aligning roller bearings are noted for long life—several iron range scalping screens have been in continuous use since 1952 *without bearing replacement.*

Here's the stamina you need in heavy run-of-pit screening jobs

With Scalping Screen operation so important to continuous mining efficiency, quick bearing replacement can be a key saving. And that's why the two-bearing design of Link-Belt scalping screens is so important. Easy access to bearings —plus hydraulic bearing removal—minimize crippling down time. Changeover is a matter of 2 to 3 hours—compared to as much as 17 hours required by other designs. Other key features include great strength . . . high-capacity, blind-free operation . . . effective separation. Get all the facts on this durable screen. Call your nearby Link-Belt office, and ask for Folder 2461, containing full particulars.

LINK-BELT

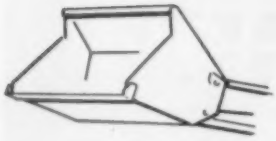
VIBRATING SCREENS

LINK-BELT MODEL "BA" SCALPING SCREEN placed ahead of a gyratory crusher to remove minus 5" material from 36" to 0" feed.

14,475-R

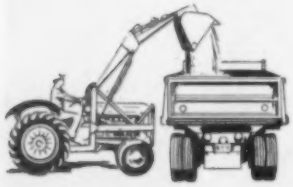
LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World.

Measure the load, compare the price...see how FORD GIVES YOU MORE!



More Capacity Per Dollar

Ford Tractor-Loader gives you ½-ton load capacity at full lift . . . more than a ton breakaway capacity. Choice of buckets for many jobs.

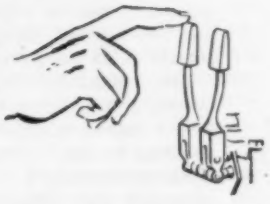


Greater Reach and Lift

Ford Industrial Loader provides 10′ 10″ lift from ground to bucket bottom . . . 26″ reach at full lift. Load entire truck from one side.

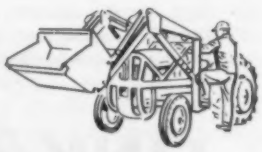
Instant Hydraulic Control

Easy-to-operate levers provide full, instant control of loader and bucket. Tractor hydraulic system is free for use with rear-mounted tools.



Easy, Step-On Design

Ford Loader leaves side of tractor open. Wide, low step-plate enables operator to move quickly, safely and easily into seat, with no climbing.



Find out how a Ford Tractor-Loader can handle your jobs for less. See your Ford Tractor and Equipment dealer, or write to: Tractor and Implement Division, Ford Motor Company, Birmingham, Mich.

Ford
TRACTORS AND INDUSTRIAL EQUIPMENT

You see more **FORDS** *because they save more money!*

W. R. Dersnah of P. C. A. Accepts Advisory Post With Cement Firm in Java

W. R. Dersnah, manufacturing process engineer for the Portland Cement Association since 1953, resigned on February 1 to accept an advisory position as chief chemist with N. V. Pabrik Semen Gresik of Indonesia. This new cement plant, to be completed soon, is being built by Morrison-Knudsen International for the Indonesian Government. The location is approximately five miles from Surabaja on the island of Java.

This will be the first cement plant on the island of Java. It will be operated using the wet process, with oil as the fuel. The advisory staff of American cement personnel will assist in the operation for approximately two years. Fourteen Indonesian technical students who will work at this plant are currently studying in this country in preparation for their duties.

W. R. Dersnah

Prior to his employment in the Manufacturing Process Department of the Association, Mr. Dersnah was chief chemist for the Medusa Portland Cement Company, Cleveland, Ohio.

Ideal Earmarks $170,000,000 For 10-Year Expansion Plan

According to Cris Dobbins, president of the Ideal Cement Company, this firm plans to spend $170,000,000 during the next 10 years to increase its annual capacity to 40,000,000 bbl. The objective for 1958 is 31,000,000 bbl. Last year Ideal's output was just under 24,000,000 bbl., a 4 percent increase from 1955.

It was indicated that the company's proposed expansion program is based on projections of an anticipated 66 percent increase in cement use during the next 11 years. This rising demand will result partially from the requirements of the big federal highway program. It is estimated that by 1966 the demand will be at the rate of 476,000,000 bbl. annually.

Penn-Dixie Sales, Earnings Hit Record Levels in 1956

Net earnings of Penn-Dixie Cement Corporation for 1956 totaled $8,294,541 after provision for taxes, a new high for the company. This equals $3.12 a share on the 2,655,420 capital shares outstanding on December 31, 1956, excluding the 5 percent dividend in stock paid on December 14, 1956. The 1956 net income registers an increase of 20.6 percent over net earnings of $6,876,121 for 1955, equivalent to $2.72 a share on the 2,528,971 shares outstanding on December 31, 1955, excluding the 5 percent stock dividend paid in that year.

Net sales in 1956 also reached the record level of $48,573,614, an increase of 12.8 percent over sales of $43,064,659 in 1955.

The 1956 figures reflect operations of Penn-Dixie's plant No. 7 at Buffalo, N. Y., for the full year, while 1955 figures included these operations only from April 29, the date of acquisition.

Bulletin on Volcanic Materials Issued by Calif. Div. of Mines

Bulletin 174, recently issued by the California Division of Mines, contains a paper entitled *Pumice, Pumicite, and Volcanic Cinders in California* by Charles W. Chesterman. The paper is a discussion of the geology, origin, and location of California's deposits of these valuable volcanic materials.

Technology of Pumice, Pumicite, and Volcanic Cinders, by F. Sommer Schmidt, also included in the bulletin, gives physical data for these materials.

Bound in gray cloth, the 119 page bulletin may be obtained at $2.50 per copy from the California Division of Mines, Ferry Building, San Francisco 11, Calif.

The Medusa Portland Cement Company, Cleveland, Ohio, is constructing a $6,000,000 plant at Wampum, Pa. The plant is being erected to replace the one now operated by Medusa at Wampum.

GENERAL REFRACTORIES

A COMPLETE REFRACTORIES SERVICE... *for Rock Products*

Whether it's a portland cement plant, a lime plant, a gypsum plant, or a kiln for burning dolomite and magnesite—we can supply all of your refractory requirements.

Here are some Grefco refractories which should prove of particular interest to you:

RITEX MAGNESITE BRICK — a patented, chemically bonded basic brick for lining the burning zone of rotary cement, dolomite and magnesite burning kilns subjected to service too severe for high alumina brick linings. RITEX also has applications in many vertical (shaft) limeburning kilns.

STEELKLAD BRICK—a RITEX basic brick with steel plates already attached. It may provide major savings in your operation.

HIGH ALUMINA BRICK—These come in a full line of shapes and sizes. ARCO-70 (70% Alumina) is most generally recommended, though brick ranging from 50% to 85% Alumina can also be furnished.

As part of our complete refractories service, we have developed cements, mortars, plastics and castables for the service conditions which have proved long-lasting and economical. They meet all the varying requirements of dry or wet application and cold or hot sets. Delivered in cans or bags of various weights.

GENERAL REFRACTORIES CO.
Philadelphia 2, Pa.

1955 Sand, Gravel Figures Show 6 Percent Increase Over 1954 Production

Domestic production of sand and gravel in 1955 as reported to the Bureau of Mines, United States Department of the Interior, totaled 592,089,000 short tons valued at $536,243,000. This was an increase of 6 percent in quantity and value over the 1954 figures. Seventy-one percent of the total production, virtually the same percentage as in the previous year, came from commercial operations. The remaining 29 percent was produced by, or for, federal, state, county, and municipal governments.

California continued to lead in production of sand and gravel, followed in order by Michigan, Texas, Wisconsin, Ohio, Illinois, Minnesota, and New York. These 8 states accounted for more than 45 percent of the total United States production.

Producers reported that trucks moved 77 percent of all sand and gravel in 1955, the same as in the previous year. Rail haulage remained constant at 14 percent in 1955. Waterway haulage decreased from 5 percent in 1954 to 4 percent in 1955. The remaining 5 percent was unspecified.

Sand and gravel output by commercial producers totaled 420,012,000 short tons, 6 percent greater than the 1954 production. Sand and gravel used for paving increased 7 percent over 1954 to 172,701,000 short tons, while that used for building increased 4 percent in 1955 to 196,909,000 short tons.

Sand used for industrial purposes increased in all categories except filter sand in 1955, a reversal of the 1954 results. The total increase in 1955 was nearly 17 percent to 18,594,000 tons.

Production of glass sand in 1955 totaled 6,149,000 tons with an average value of $2.77 per ton, an increase of nearly 6 percent over 1954 tonnagewise, but a decrease of 2 percent in average value.

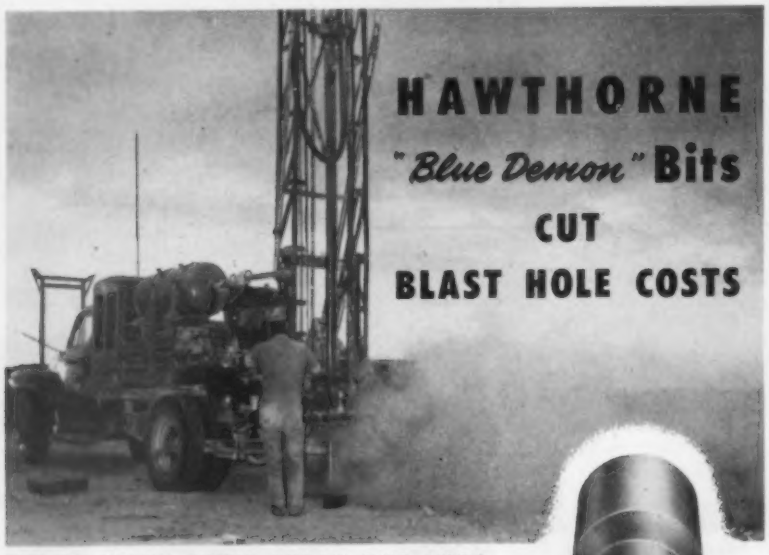
The output of molding sand totaled 8,255,000 short tons, about 31 percent more than in the previous year. The largest producers in order of output were Michigan, New Jersey, Indiana, Wisconsin, and Illinois.

Output of grinding and polishing sand (including blast sand) increased 28 percent over 1954. Total production totaled 1,717,000 short tons with an average value of $2.69. The average value was 6 percent lower than in the previous year. Production of fire or furnace sand in 1955 increased 17 percent over the previous year to 545,000 short tons, with an average value of $2.03.

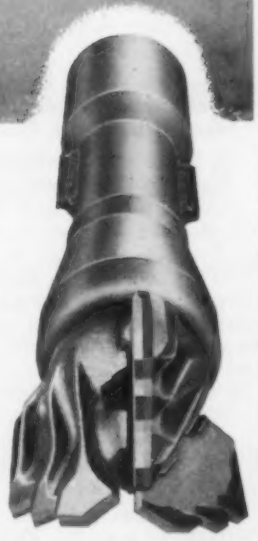
The output of engine sand in 1955 increased 7 percent to 1,470,000 short tons with an average value per ton of $1.16, down 6 percent from the previous year's average.

Washed, screened, and otherwise prepared sand and gravel comprised 88 percent (370,198,000 short tons) of total commercial production. The average value for this prepared product was $1.11 per ton compared with 57 cents for unprepared commercial bank-run material.

Production of sand and gravel for the use of government agencies accounted for 29 percent of the total in 1955, virtually the same percentage as in the previous year. The total output by government-and-contractors in 1955 was 172,077,000 tons, an increase of 8 percent. Sand increased, but gravel decreased in value for building purposes in 1955. On the other hand, gravel increased and sand decreased in value for paving in 1955, as compared with the previous year.



HAWTHORNE
"Blue Demon" Bits
CUT
BLAST HOLE COSTS



SERIES "700" WITH BREAK-OUT LUGS SIZES 3⅞"-5⅝" FOR HEAVY DUTY ROTARY AIR DRILLING CUTS HOLE TIME

Rotary air drilling, with Hawthorne "Blue Demon" Series "700" Carbide Insert Bits, has been increasing drilling speeds up to 50%, with progressively decreasing drilling cost per ton.

The Series "700", using carbide inserted replaceable blades, was designed for hard rock exploration air drilling on the Edwards Plateau and has proved equally successful in quarry type drilling in medium-hard and softer limestone and sandstone.

Many areas previously requiring more expensive roller bits are now successfully using Hawthorne "Blue Demon" Bits.

Break-out lugs facilitate rapid replacement of expendable worn blades, since quarry drilling requires frequent bit change.

Hawthorne's experience and reputation in efficient bit design and manufacturing quality in the field of resources exploration is now available to the blast hole drilling industry.

In average quarry drilling, you should check the possibilities of Hawthorne "Blue Demon" Carbide Bits for increased drilling efficiency.

HERB J. HAWTHORNE INC.
P. O. BOX 7366, HOUSTON 8, TEXAS
Cable Address: HAWBIT

Write TODAY for your FREE copy of "Blue Demon" Bit Catalog 656 which fully describes and prices the complete line of Hawthorne Bits in sizes from 1⅞" through 13", and for recommendations for your specific drill.

6970

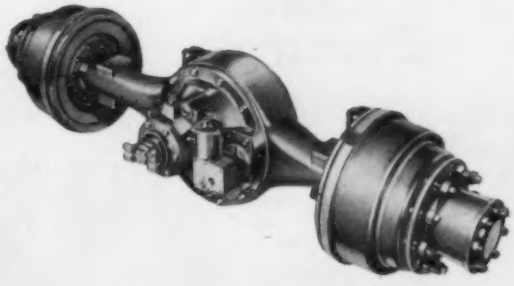
IN EATON 2-SPEED AXLES

REDUCES STRESS AND WEAR

ADDS TO AXLE LIFE • CUTS MAINTENANCE

KEEPS TRUCKS ON THE JOB • LOWERS OPERATING COST

Eaton's exclusive planetary construction distributes gear-tooth loads over four "planet" gears, holding stress and wear on any one gear tooth to a minimum. Completely locked out in the high speed range, these four gears rotate only slowly in the low speed range. The result is quiet operation, easy clash-free shifting, minimum wear, materially longer axle life. This rugged planetary design, plus forced-flow lubrication enables Eaton 2-Speeds to establish outstanding performance records. Eaton 2-Speeds also reduce stress and wear on engines and all power transmitting parts; they make it possible for trucks to haul more, quicker, longer, at lower cost.



More than Two Million
Eaton Axles in Trucks Today.
For complete information,
see your truck dealer.

EATON

AXLE DIVISION

MANUFACTURING COMPANY
CLEVELAND, OHIO

PRODUCTS: Engine Valves . Tappets . Hydraulic Valve Lifters . Valve Seat Inserts . Jet Engine Parts . Hydraulic Pumps Motor Truck Axles . Permanent Mold Gray Iron Castings . Forgings . Heater-Defroster Units . Automotive Air Conditioning Fastening Devices . Cold Drawn Steel . Stampings . Gears . Leaf and Coil Springs . Dynamatic Drives, Brakes, Dynamometers

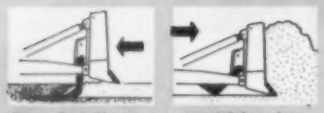
FASTER
"2 WAY" DOZING
with
PRECO
Back-Rippers

Because these rugged Back-Rippers break up the ground while the tractor is backing up — thus permitting the blade to make a **full load faster** on the forward trip — they give you **double advantage.**

Preco Back-Rippers make **every** dozing job easier — they pull out rocks and roots. Steep banks can be raked down quickly and road building is speeded up as the Rippers tear out boulders, ledge rock and hard material.

FOR . . . Building Pioneer Roads
Clearing Land and Rights-of-way
Gravel Pit Operations
Slate Breaking in Strip Mines
Logging
Mounted on Pusher Tractor for Faster Scraper Loading.

BACK UP RIPPING **EASIER FORWARD DOZING**



Preco Back-Rippers are completely automatic in operation — they dig in on the back-up trip and ride on the surface when going forward. There are no controls and, when desired, they can be locked up out of the way.

See your Caterpillar Dealer or send the coupon for information.

PRECO INCORPORATED
6300 E. Slauson Avenue
Los Angeles 22, Calif.

Please send information on Preco Back-Rippers.

Name_____

Address_____

Sales Dept. Promotions For Sippey, Rothermund Of Columbia Cement Div.

Promotions for two members of the Columbia Cement Division, Pittsburgh Plate Glass Company, have been announced. Walter B. Sippey, who was formerly sales manager, has been appointed to the newly-created position of director of sales, and Karl L. Rothermund, who was previously assistant sales manager, will succeed Mr. Sippey as sales manager.

W. B. Sippey

K. L. Rothermund

Mr. Sippey has been associated with Pittsburgh since 1917. He was appointed assistant to the sales manager and credit manager of the Columbia Cement Division in 1926. In 1941 he was named sales manager.

Mr. Rothermund joined the Columbia Cement Division in 1941 after several years in the construction industry. In 1950 he was appointed assistant division sales manager.

Hans Frederiksen Appointed To Texas Portland Position

Hans Frederiksen, former director of operations of La Cemento Nacional of Ecuador, has accepted a position as assistant plant manager of the Texas Portland Cement Company, Orange, Tex., according to Kent B. Diehl Sr., president.

Hans Frederiksen

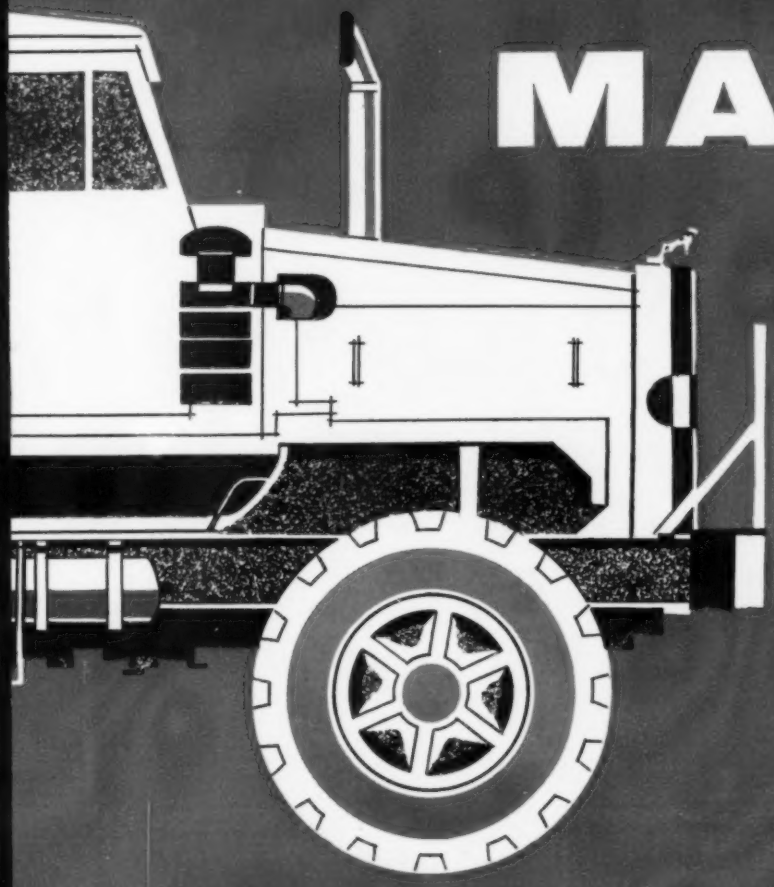
Mr. Frederiksen, a native of Denmark, is a graduate of M. E. Institute of Copenhagen. He left his native country in 1946 to become associated with EBASCO Service, Inc., of New York as maintenance engineer of an electric power project at Guayaquil, Ecuador. In 1949 he became associated with the Ecuadoran Cement Trust.

As assistant plant manager, he will be in charge of the production schedule at the new $6,000,000 plant.

According to Olaf P. Jenkins, chief of the Division of Mines, California has more than doubled its production of cement since 1945. Shipments from all mills in 1945 totaled 15,922,772 bbl., compared to 1955 shipments of 36,000,000 bbl.

The United States Gypsum Company, Chicago, Ill., has leased the insulation board and hardboard products plant owned by the Oregon Fibre Products, Inc., at Pilot Rock, Oreg. Under the terms of the lease, the plant will be operated by U. S. Gypsum.

NEW MACK



heavy-duty four- and six-wheel dumpers

15- to 34-ton capacity

✻ LARGEST SELECTION OF HEAVY DUMPERS

Mack offers you the most complete line of dumpers for mining, quarrying, road building, construction. From heavy-duty 170 horsepower, four-wheel dumpers with 15-ton capacities to super-duty 400-horsepower, six-wheel dumpers with 34-ton capacities, Mack provides the economy and performance that can mean bigger hauling profits for you.

✻ CHOICE OF ENGINES

Mack offers you a choice of engines . . . Cummins diesels in the 300- and 400-horsepower class . . . or Mack Thermodyne and Cummins diesels in the 170 to 205 horsepower class. No need to alter existing maintenance facilities to handle new engine makes . . . you get the truck you want with the engine you want.

✻ OUTSTANDING PERFORMANCE

When you buy Macks, you know that you are getting top performance, outstanding economy, maximum dependability—qualities that have made Mack the acknowledged heavy-duty truck leader in the industry. Moreover, Mack dumpers are planned for accessibility throughout . . . engines are easily reached, no place in the suspension ever needs adjustment—these and many more Mack features reduce maintenance costs and make routine servicing easier. And in Macks, you get the finest transmissions and axles available . . . made by Mack and found only in Macks!

✻ COMPETITIVELY PRICED

Mack off-highway dumpers are priced right in line with competitive makes. Yet, with Macks, you get those "extras" that mean more payloads at lower hauling costs . . . cabs engineered for maximum driver efficiency . . . specially designed components with extensive use of heat-treated alloy steels . . . single-unit all-welded frames that can take plenty of hard knocks . . . outstanding performance and economy from a complete line of engines.

✻ STOCK DELIVERY

All 15 and 22½-ton Mack dumpers are available from stock. The units you want with the engines and transmissions you want can be supplied upon gratifyingly short notice. There are no delays, no production schedules for you to worry about. For more information on delivery, contact your local Mack Dealer or Representative.

MACK LRX

capacity: 15 tons

This four-wheel, off-highway dumper combines a big 15-ton rated capacity with outstanding maneuverability. Either a Mack or Cummins diesel engine of the 200-horsepower class—along with heavy-duty clutch, 10-speed transmission, and Mack's Planidrive rear axle assembly—gives plenty of pulling power for long hauls on steep grades. Rugged, unified frame assembly, powerful air brakes, and comfortable cab with driver's position offset to the left assure the top performance and efficiency that have made the LRX a highly popular dumper in mine, quarry, and road-building operations.

CONDENSED SPECIFICATIONS

STANDARD EQUIPMENT

DIMENSIONS:	14.00-24 Rear Tire
Wheel Base	12′ 6″
Platform	9′ 1″
Overall Width	10′ 9½″
Overall Height	10′ 5″
Overall Height (Body Raised)	18′ 8″
Overall Length	24′ 7½″
Turning Circle Diam. (To outside edge of tire)	60′
Weight (Chassis, Body & Hoist)	33,000 lbs.
Payload	30,000 lbs.

ENGINE (Diesel):

Model	END 673
Make	Mack, Thermodyne
Type	Naturally aspirated
Number of cylinders	Six
Bore and stroke	4⅛″ x 6″
Piston displacement, cu. in.	672
Brake horsepower @ 2100 r.p.m. (gov.)	170
Max. torque @ 1200 r.p.m.	480 lb.-ft.

CLUTCH (Available with END 673 only):

Type	Mack single-plate, dry
Area of engagement, sq. in.	253

ELECTRICAL SYSTEM:

Voltage and capacity . 12 V., 50 Amp. (24 V., Starting)

TRANSMISSION:

Type	Mack selective, constant mesh
No. of speeds, forward	Nine
reverse	Two

FRONT AXLE:

Make . Mack Reversed-Elliott, dropped forged I-beam

REAR AXLE:

Make	Mack Planidrive
Drive	Dual Reduction
Final Drive (3rd reduction)	Planetary gear train within wheel hubs
Total Ratio	16.5

BRAKES (Air):

Compressor	Tu-Flo
Type	Internal expanding
Front, size	17¼″ x 5″ x ¾″
Rear, size	20″ x 7″ x ⅜″
Hand, size	12″ x 5″ x ⅜″, Bendix

FRAME:

Side-members, size	12½″ x 6¾″ x ½″, wide flange I-beam, rolled section
Section modulus	60.7 (per rail)

SPRINGS:

Front, type	Semi-elliptic
Rear, suspension	Semi-rigid, axle saddle mounted to frame

WHEELS:

Type . . . . . Cast, spoke

STEERING GEAR:

Control . . . . . Manual

TIRES:	Front	Rear
Size	12.00-24 (16P) Rib	14.00-24 (20P) Lug

CAB:

Type: Heavy-duty off-highway, closed, all-steel welded. Offset 10¾″ to left of chassis centerline provides clear vision for driver to rear.

CHASSIS EQUIPMENT: Front and rear tow pins; air horn on cab roof; cab entrance steps and platforms; rear view mirror, left side; channel type front bumper; dual windshield wipers; stop-tail light; rim lug wrench and handle.

HOIST:

Make & model . . . . . Heil
Type-Twin, double-acting, 8″ diameter, hydraulic cylinders with 24″ stroke, 70° dumping angle.

BODY:

Type	Rock, with scoop end
Make	Heil
Capacity, line of plate	9.8 cu. yds. struck

Construction: ¼″ steel plate shell bottom; ⅜″ sides and header; ⅛″ wear and side bevel plates; ¼″ canopy. 3″ x 5 lb. channels between floor plates either side of a 1⅛″ edge-grain hardwood middle section filler.

OPTIONAL EQUIPMENT

ENGINE (Diesel):

Model	NHB	ENDT 673
Make	Cummins	Mack, Thermodyne
Type	Naturally aspirated	Turbocharged
Number of cylinders	Six	Six
Bore and stroke	5⅛″ x 6″	4⅛″ x 6″
Piston displacement cu. in.	743	672
Brake horsepower @ 2100 r.p.m. (gov.)	200	205
Max. torque @ r.p.m.	1200	1400-1600
pound-feet	537	560

CLUTCH (Included with NHB and ENDT 673):

Type	Mack two-plate, dry
Area of engagement, sq. in.	416

TIRES:	Front	Rear
Size	13.00-24 (18P) Rib	16.00-25 (20P) Lug

BODY:

Type	Flared Quarry
Make	Heil
Capacity, line of plate	11 cu. yds. struck

Construction: ¼″ steel plate shell bottom; ½″ sides; ⅜″ header; ½″ wear and side bevel plates; ¼″ canopy. 3″ x 5 lb. channels between floor plates either side of a 1⅛″ edge-grain hardwood middle section filler.

Exhaust Heating: Provisions for exhaust heating of dump body available.

Body Equipment: (for std. and opt. bodies): (9) ¾″ x 6″ alloy wear bars; rock ejectors; ½″ alloy wear plate; welded-on side boards (for std. body only).

CHASSIS EQUIPMENT: Automatic radiator shutters; Wagner "BB" (24 hour chart 0-3500 r.p.m.) tachograph, in place of standard tachometer; speedometer; hubodometer, left front wheel; Vickers power steering; front wheel limiting valve; hand control valve to operate rear service brakes; low air pressure indicator, Wig-Wag type; radiator guard; 25,000 B.T.U. hot water cab heater with defrosters; spare rim; hydraulic jack, 20-ton; air starting.

MACK LRSW

capacity: 30 tons

Powered by a 300-horsepower engine, this 30-ton, six-wheel dumper has what it takes for off-highway operation in mines, quarries and earth-moving projects. Smooth application of power to its balanced, four-wheel drive bogie is obtained by an air-assisted clutch and overgear transmission with two-speed compound or torque converter. Convenient location of controls, angle steering column, hydraulic steering booster, and extreme left driver position give easy and efficient handling. Best materials, precision manufacture, and specially engineered components make the LRSW capable of withstanding the toughest 'round-the-clock hauling.

CONDENSED SPECIFICATIONS

STANDARD EQUIPMENT

DIMENSIONS:

Wheelbase	16′ 10″
Platform	14′ 11½″
Overall Width	11′ 1⅝″
Overall Height	11′ 5⅜″
Overall Length	29′ 4″
Overall Height (Body Raised)	24′ 10″
Turning Circle Diam. (To outside edge of tire)	78′
Weight (chassis, body & hoist)	60,000 lbs.
Payload	60,000 lbs.

ENGINE (Diesel):

Model	NHRBIS
Make	Cummins
Type	Supercharged
Number of cylinders	6
Bore and stroke	5½″ x 6″
Piston displacement, cu. in.	743
Brake horsepower @ 2100 r.p.m. (gov.)	300
Max. torque @ 1500 r.p.m.	818 lb.-ft.

CLUTCH:

Type	Mack two-plate, dry
Area of engagement, sq. in.	416
Actuation	Manual, with air assist

ELECTRICAL SYSTEM:

Voltage and capacity	12 V., 50 Amp. with 24 V., starting

TRANSMISSION:

Type	Mack two-lever, Duplex
No. of speeds, forward	Eight
reverse	Two

FRONT AXLE:
Type . . . . Mack Reversed-Elliott, drop forged I-beam

BOGIE:

Make	Mack Planidrive
Final drive, type	Four-wheel, planetary
Inter-axle differential, type	Mack concentric cam and plunger Power Divider
Carriers	Mack Dual Reduction
Total Ratio	18.18

BRAKES:

Type and actuation	Internal expanding, inclosed, air
Front, size	17¼″ x 5″ x ¾″
Rear, size	20″ x 7″ x ¾″
Hand, size	16″ x 3″ x ¼″, four-shoe, disc

FRAME:

Type	I-beam, wide flange
Material	Alloy steel
Side-members, size	13 15/16″ x 8″ with ⅝″ web and top flange, ⅞″ bottom flange
Section modulus	84.5 per rail

SPRINGS:

Type, front	Semi-elliptic
rear	Semi-elliptic, inverted
Suspension, Mack	Rubber Shock Insulators

SHOCK ABSORBERS, FRONT:
Type . . . . Houdaille, hydraulic

TIRES (Lug):	Front	Rear
Size	14.00-24 (20P)	16.00-25 (20P)

WHEELS . . . . Cast, spoke

STEERING GEAR:
Power steering assist . . . Vickers hydraulic booster

CAB:
Type . . Heavy-duty off-highway, closed, all-steel, welded. Offset 10¾″ to left of chassis centerline provides clear vision for driver to rear.

CHASSIS EQUIPMENT: Hubodometer; screen type radiator guard; front and rear tow pins; air horn; rear view mirror, left side; exhaust through hood with in-line muffler; channel type front bumper; door in hood side for access to oil filler and dip stick; insulating dash mat; wig-wag low air pressure indicator; windshield wipers; stop and tail light; back up light; rim lug wrench and handle.

HOIST:
Make . . . . Heil
Type—Twin, double-acting, 10″ diameter, hydraulic cylinders with 40″ stroke, 70° dumping angle with power return.

BODY:

Make and type	Heil, Rock-scoop end
Capacity, line of plate	21 cu. yds.

Construction: ¼″ steel plate shell bottom; ⅜″ sides and header; ½″ wear and side bevel plates; ¼″ canopy. 3″ x 7.1 lb. channels between floor plates either side of a 2″ edge-grain hardwood middle section filler.

OPTIONAL EQUIPMENT

ENGINE:

Make and model	Cummins, NRTO
Number of cylinders	Six
Bore and stroke	5½″ x 6″
Piston Displacement cu. in.	743
Brake horsepower @ 2100 r.p.m. (gov.)	335
Max. torque @ 1500 r.p.m.	900 lb.-ft.
Turbocharger	Turbine, exhaust driven

TRANSMISSIONS:
Westinghouse Converter and Mack 4-Speed Transmission. Clutch—2-plate, 17″.
Allison Torqmatic Converter and Allison Transmission

WHEELS, TIRES:

Front & rear Wheels, type	Cast spoke
Tires, size	16.00-25
Ply-rating, front	20 or 24
rear	24

BODY EXHAUST HEATING: Provisions to permit passage of exhaust gases through area between wear plate and shell bottom; controlled by baffles and exhausted through second rear vertical bolster on right side.

CHASSIS EQUIPMENT: Front wheel brake limiting valve; separator for air system; 25,000 B.T.U. heater with defrosters; windshield defroster fan; engine chrome cylinder liners and stellite inlet valve seats; tachograph, Wagner "BB", 24-hour chart 0-3500 r.p.m. (in place of standard tachometer); speedometer (single-hand); exhaust outlet under cab suitable for attachment to body for body heating; automatic (air) radiator shutters; 20-ton jack, hydraulic; spare rim.

MACK LRVSW

capacity: 34 tons

The 34-ton rated capacity of this super-payload, six-wheel dumper assures minimum haulage costs for the big earth-moving jobs. Equipped with a 400-horsepower engine, four-speed overgear transmission, hydraulic torque converter or two-speed compound, and a balanced, four-wheel drive bogie, LRVSW's can negotiate severe grades fully loaded. Maneuverability and ease of handling are facilitated by such features as a hydraulic steering booster and air-assisted clutch. Heat-treated, stress-proportioned, single-unit frame gives the structural stamina needed to withstand severest operating conditions. All these features, and many more, contribute to unmatched durability and minimum haulage costs.

CONDENSED SPECIFICATIONS

STANDARD EQUIPMENT

DIMENSIONS:

Wheelbase	16′ 10″
Platform	14′ 11½″
Overall Width	11′ 1⅜″
Overall Height	11′ 11″
Overall Length	31′ 7″
Overall Height (Body Raised)	25′ 2″
Turning Circle Diameter (To outside edge of tire)	78′
Weight (chassis, body & hoist)	68,000 lbs.
Payload	68,000 lbs.

ENGINE (Diesel):

Model	NVH-1200
Make	Cummins
Type	Naturally aspirated
Number of cylinders	12
Bore and stroke	5⅛″ x 6″
Piston displacement, cu. in.	1486
Brake horsepower @ 2100 r.p.m. (gov.)	400
Max. torque @ 1200 r.p.m.	1,075 lb.-ft.
Fuel tank and location	150 gal., back of cab

CLUTCH:

Make	Lipe Rollway
Type	Two-plate, dry
Area of engagement, sq. in.	571
Actuation	Manual, air assist

ELECTRICAL SYSTEM:

Voltage and capacity	12 V., 75 Amp.
Generator, make and type	Leece-Neville, alternator

STARTING SYSTEM:

Starting motor, type	Air
Make	Bendix-Westinghouse
Rating, horsepower	25
Cold starting aid	Ether injection

TRANSMISSION:

Type	Mack selective constant mesh
No. of speeds, forward	Four
reverse	One

TORQUE CONVERTER:

Model	Westinghouse 18″
Type	Single stage, hydraulic

FRONT AXLE:

Type . . . . Mack Reversed-Elliott, I-beam drop forged

BOGIE:

Make	Mack Planidrive
Final drive, type	Four wheel, planetary
Inter-axle Differential	Mack concentric cam and plunger type Power Divider
Carriers	Mack dual reduction
Total ratio	18.18

BRAKES:

Type and actuation	Internal expanding, inclosed, air
Front, size	17¼″ x 5″ x ¾″
Rear, size	20″ x 7″ x ¾″
Hand, size	16″ x 3″ x ¼″, four-shoe, disc

FRAME:

Type	I-beam, wide flange
Material	Alloy steel
Side-members, size	Depth 14¼″, flange width 8″, flange thickness 1″
Section modulus	130.0 per side

SPRINGS:

Type	Semi-elliptic
Suspension, Mack	Rubber Shock Insulators

SHOCK ABSORBERS, FRONT:

Type . . . . Houdaille, hydraulic

TIRES (Lug) Front and Rear:

Size 16.00-25 (20P)

WHEELS:

Type . . . . Cast, spoke

STEERING GEAR:

Type	Worm and roller
Power steering assist	Vickers hydraulic booster

CAB:

Type . . Heavy-duty off-highway, closed, all-steel, welded. Offset 10¾″ to left of chassis center-line provides clear vision for driver to rear.

CHASSIS EQUIPMENT: Screen type radiator guard; hubodometer; front and rear tow pins; air horn; rear view mirror, left side; dual exhaust through hood with inline mufflers; channel type front bumper; rim lug wrench and handle; door in hood side for access to oil filler and dip stick; insulating dash mat; windshield wipers; stop and tail light; back up light.

HOIST:

Make & Type . . Heil, twin, double-acting, outboard mounted, four-section telescopic cylinder assembly directly connected to body and chassis through a universal joint arrangement to provide maximum flexibility.

Dumping angle . 70°

BODY:

Make & Type	Heil Rock, scoop end
Capacity, line of plate	24 cu. yds. struck

Construction: ¼″ steel plate shell bottom; ⅜″ sides and header; ½″ wear and side bevel plates; ¼″ canopy. 3″ x 7.1 lb. channels between floor plates either side of a 2″ edge-grain hardwood middle section filler.

OPTIONAL EQUIPMENT

TRANSMISSION (In place of 4-Speed and Westinghouse Converter):

Make & Type	Mack Two-Lever, Duplex
Speeds Forward	8
Speeds Reverse	2

TIRES (Lug) Front and Rear:

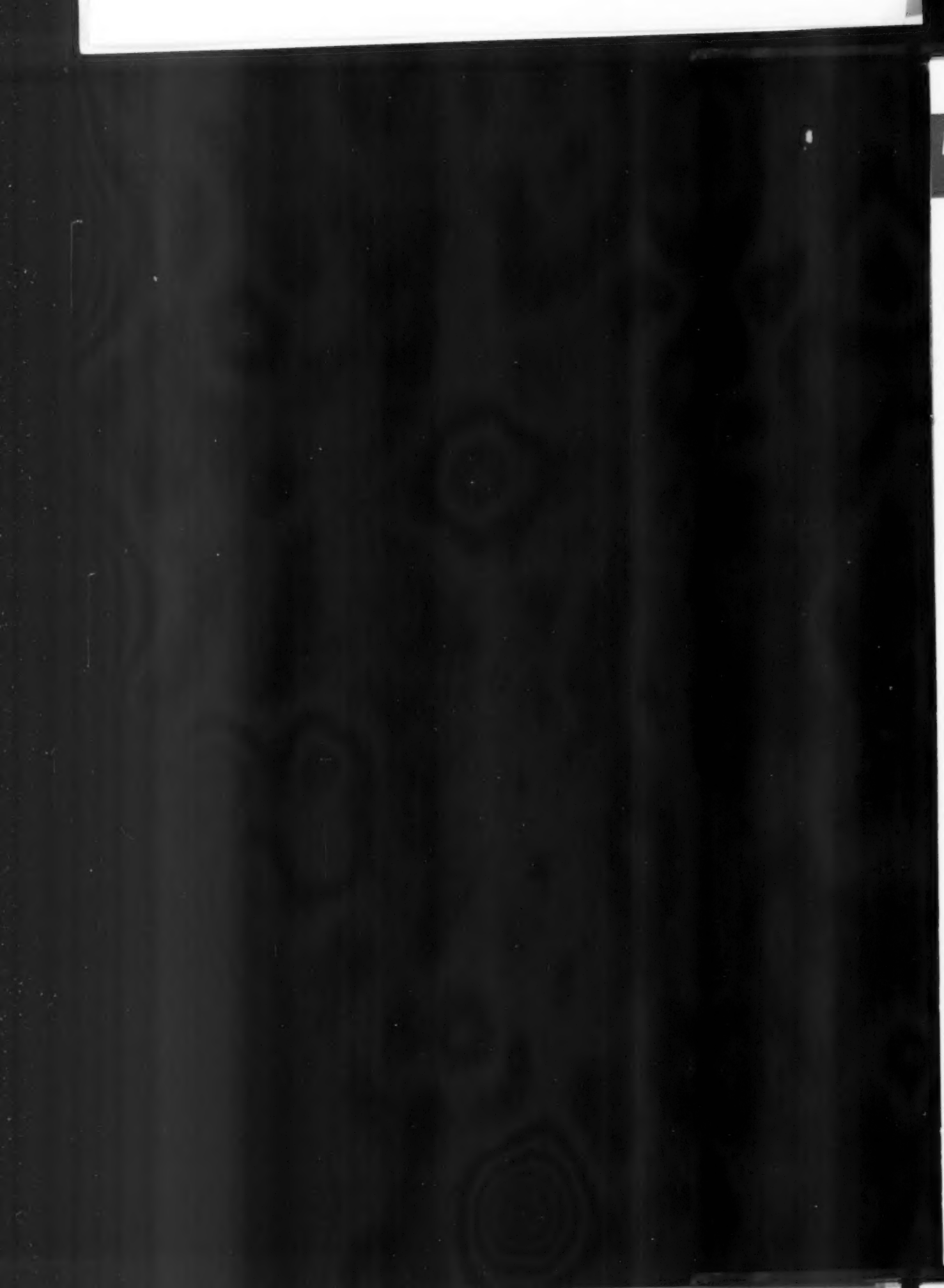
Size 16.00-25 (24P)

BODY EXHAUST HEATING: Provisions to permit passage of exhaust gases through area between wear plate and shell bottom; controlled by baffles and exhausted through second rear vertical bolster on right side.

CHASSIS EQUIPMENT: Front wheel brake limiting valve; 25,000 B.T.U. heater with defrosters; windshield fan; speedometer (single-hand); tachograph, Wagner "BB"—24-hour chart, 0-3500 r.p.m. (in place of standard tachometer); engine fan—Schwitzer-Cummins fan drive with automatic temperature control; exhaust outlet under cab suitable for attachment to body for body heating; 20-ton hydraulic jack; spare rim.

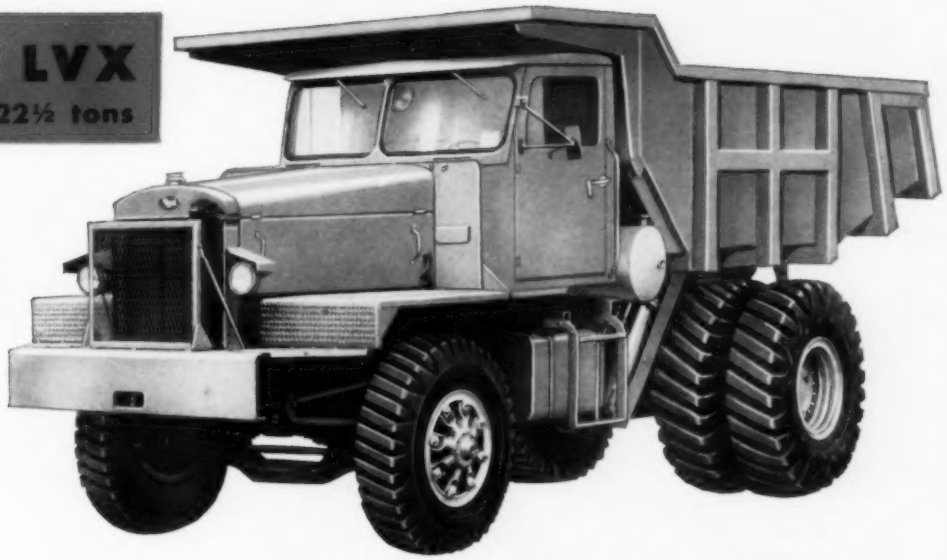
MACK first name for TRUCKS

Mack Trucks, Inc., Plainfield, New Jersey • In Canada: Mack Trucks of Canada, Ltd.



MACK LVX

capacity: 22½ tons



This four-wheel dumper with its 22½-ton rated capacity provides maximum payloads at minimum unit cost. Equipped with a 300-horsepower engine, over-gear transmission with two-speed compound or torque converter, and Mack's exclusive Planidrive rear axle assembly, it is powered to give top performance under the most punishing operating conditions.

All-welded, single-unit, alloy-steel frame gives LVX's stamina and rugged durability. Elbow steering column, hydraulic steering booster, two-plate air-assisted clutch, and job-engineered cab with extreme left driver position assure maximum operating efficiency. From top to bottom, this big Mack gives you the "extras" that mean minimum hauling costs.

CONDENSED SPECIFICATIONS

STANDARD EQUIPMENT

DIMENSIONS:

Wheelbase	14′ 2″
Platform	9′ 11″
Overall Width	11′ 2″
Overall Height	11′ 6¼″
Overall Length	26′ 8½″
Overall Height (Body Raised)	21′
Turning Circle Diam. (To outside edge of tire)	62′
Weight (chassis, body & hoist)	40,800 lbs.
Payload	45,000 lbs.

ENGINE (Diesel):

Model	NHRBIS
Make	Cummins
Type	Supercharged
Number of cylinders	Six
Bore and stroke	5⅛″ x 6″
Piston displacement, cu. in.	743
Brake horsepower @ 2100 r.p.m. (gov.)	300
Max. torque @ 1500 r.p.m.	818 lb.-ft.

CLUTCH:

Type	Mack Two-plate, dry
Area of engagement, sq. in.	416
Actuation	Manual, with air assist

ELECTRICAL SYSTEM:
Voltage and capacity . 12 V., 50 Amp. (24 V. Starting)

TRANSMISSION:

Type	Mack selective, constant mesh
No. of speeds, forward	Eight
reverse	Two

FRONT AXLE:
Type . . . Mack Reversed-Elliott, drop forged I-beam

REAR AXLE:

Make	Mack Planidrive
Drive	Dual reduction, spiral bevel
Final drive (3rd reduction)	Planetary gear train within wheel hubs
Total Ratio	17.66

BRAKES (Air):

Compressor	Tu-Flo
Type	Internal expanding
Front, size	17¼″ x 5″ x ¾″
Rear, size	18″ x 10″ x ¾″
Hand, size	16″ x 3″ x ¼″

FRAME:

Type	I-beam, wide flange
Material	Alloy steel
Side-members, size	13 11/16″ x 8″ x ⅜″ (Fabricated)
Section modulus	74.8 per rail

SPRINGS:
Front
Type . . . . . Semi-elliptic
Suspension . . Mack rubber shock insulators
Rear
Type . . . . . Progressive rate, semi-elliptic
Suspension . . Cam face slipper ends with radius rods

TIRES:

Front	Rear
Size . . . 14.00-24 (16P) Rib	18.00-25 (24P) Lug

WHEELS:
Type . . . . . Cast, spoke

STEERING GEAR:
Power steering assist . . . Vickers hydraulic booster

CAB:
Type . Heavy-duty off-highway, closed, all-steel, welded. Cab offset 10¾″ to left of chassis centerline provides clear vision for driver to rear.

CHASSIS EQUIPMENT: Screen type radiator guard; front and rear tow pins; air horn on cab roof; dual windshield wipers; two air reservoirs; rear view mirror, left side; exhaust through hood with inline muffler; channel type front bumper; stop-tail light; rim lug wrench and handle.

HOIST:
Type . . . Twin, double-acting, outboard mounted, three section telescopic cylinder assembly directly connected to body and chassis through a universal joint arrangement providing a 70° dumping angle.

BODY:

Type	Rock, with scoop end
Make	Heil
Capacity, line of plate	14.8 cu. yds. struck

Construction: ¼″ steel plate shell bottom; ⅜″ sides and header; ½″ wear and side bevel plates; ¼″ canopy. 3″ x 7.1 lb. channels between floor plates either side of a 2″ edge-grain hardwood middle section filler.

OPTIONAL EQUIPMENT

ENGINE:

Model	NRTO
Make & type	Cummins, turbocharged
Number of cylinders	Six
Bore and stroke	5⅛″ x 6″
Piston displacement, cu. in.	743
Brake H.P. @ 2100 r.p.m. (gov.)	335
Max. torque @ 1500 r.p.m.	900 lb.-ft.

TRANSMISSIONS:
Westinghouse Converter and Mack 4-Speed Transmission. Clutch—2-plate, 17″.
Allison Torqmatic Converter and Allison Transmission.

FRONT AXLE: Special Heavy-duty, Reversed-Elliott, Drop Forged I-beam.

TIRES:

Front
Size . . . 14.00-24 (20P) Rib

BODY:

Type	Flared Quarry
Make	Heil
Capacity, line of plate	15 cu. yds., struck

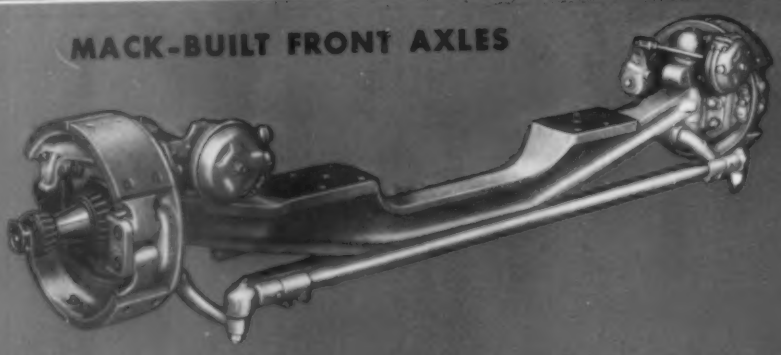
Construction: ¼″ steel plate shell bottom; ½″ sides; ⅜″ header; ½″ wear and side bevel plates; ¼″ canopy. 3″ x 7.1 lb. channels between floor plates either side of a 2″ edge-grain hardwood middle section filler.

Exhaust Heating: Provision for exhaust heating of dump body available.

CHASSIS EQUIPMENT: Air starting, Ingersoll-Rand 9HP; Tachograph, Wagner "BB" (24 hour chart 0-3500 r.p.m.) in place of standard tachometer; Wig-Wag low air pressure indicator; hand control valve to operate rear service brakes; front wheel brake limiting valve; 25,000 B.T.U. hot water cab heater with defrosters; windshield fan mounted on windshield header; hub-odometer; air operated radiator shutter; Schwitzer air operated Thermo-controlled radiator fan hub; speedometer; back-up light; hydraulic jack, 20-ton; spare rims.

only MACK gives you features like these...

MACK-BUILT FRONT AXLES



Mack's reversed Elliott, forged I-beam front axles are made extra strong for long, trouble-free service. Extensive use of heat-treated steels for crucial parts means minimum maintenance. Straight tie rod and rugged construction of air-actuated brake shoes insure top performance.

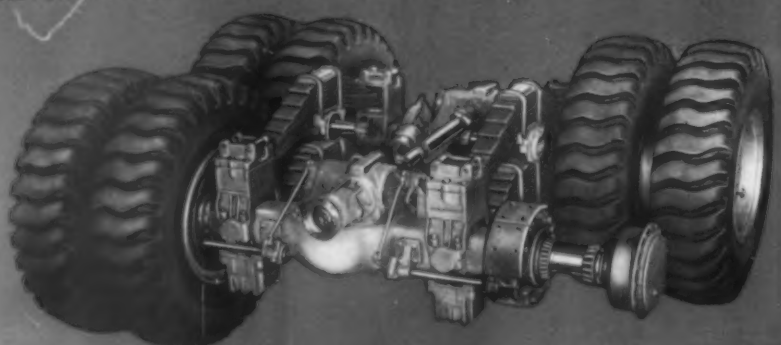
MACK-BUILT 2-WHEEL REAR AXLES

Mack's two-wheel, rear axle assemblies have an unmatched reputation for durability under strenuous service. The strongest, most wear-resistant materials are used throughout. Dual reduction, gear-type differential and Mack's famous planetary gear reduction at the wheel hubs (Planidrive) provide the smooth distribution of power needed for top truck performance. Planetary gears can be serviced or repaired without removing tires or disturbing wheel bearing adjustment.

MACK-BUILT TRANSMISSIONS

Dependable performance and long life are standard in Mack transmissions. Shown here is the heavy-duty overgear transmission used for the LRVSW, LRSW, and LVX off-highway dumpers. The four-speed main transmission and two-speed compound are assembled as a unit to give eight forward and two reverse speeds. The four-speed main transmission without the two-speed compound is offered in combination with torque converter. All gears use Mack tetrapoid or quadrapoid tooth design and are drop-forged, case-hardened, and generator-ground . . . gears noted for lasting the life of the truck.

MACK-BUILT 4-WHEEL BALANCED BOGIES WITH EXCLUSIVE POWER DIVIDER



Under the worst conditions of mud, loose gravel, or difficult terrain, you get maximum pulling power with Mack's four-wheel drive Balanced Bogies because exclusive Mack Power Dividers apply power to the wheels with traction. Planidrive final reduction gears in all four hubs provide needed reduction without excessively large carriers, differentials, or axle shafts. Maintenance is reduced to a minimum.

• This operation at Millbrook Quarries, Inc., Broadrun, Va., produces 1,000 tons of crushed rock daily. For transport from the quarry pit to the crusher the management recently purchased three 11-ton LeTourneau-Westinghouse Model D rear dumps. Shown here is one of the dumps being loaded with blasted rock by a 1½-cu. yd. Norhtwest shovel.

Building Trends in South Shown in Solite Color Film

The Changing South, an 18-minute color film produced by the Southern Lightweight Aggregate Corporation, Richmond, Va., has been viewed by approximately 5,818,618 persons. Viewers include TV audiences, high school students, business groups, and members of social and civic clubs.

This film documents the vast changes in Southern industry, commerce, transportation, and living conditions in recent years. It points out particularly the rapid advances in construction techniques made possible by new methods and materials, showing the important role modern building plays in local progress. Southern Lightweight manufactures Solite, a lightweight concrete aggregate.

The full-color motion picture is available for showing to any interested groups by written request to the film producer, Cabell Eanes, Inc., 509 West Grace Street, Richmond, Va.

N. W. Portland Cement Co. Re-elects Former Officers

All officers of the Northwestern Portland Cement Company of Seattle were re-elected by shareholders at their annual meeting. The firm is headed by Gordon Tongue, Seattle, president, and James D. Burns, Condon, Oreg., board chairman.

Other officers are C. T. W. Hollister, Seattle, chairman of the executive committee; Harold Shefelman, Seattle, and Frank Kiernan Jr., Portland, vice-presidents; D. G. Metcalf, Seattle, secretary-treasurer, and H. Johnson, Seattle, assistant secretary-treasurer.

The directors authorized payment of a dividend of $1.50 per share on the company's first preferred stock, payable on March 20, 1957, to shareholders of record March 9, 1957.

Permanente Cement Acquires 2,200-Acre N. M. Plant Site

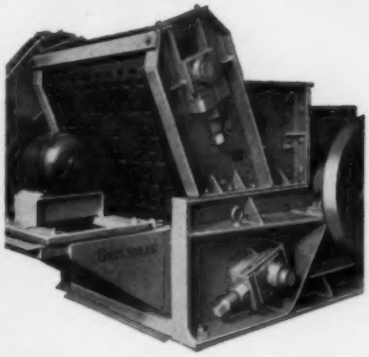
Permanente Cement Company has exercised its options to purchase approximately 2,200 acres of land, containing large limestone deposits, near Scholle, N. M., according to an announcement released by Wallace A. Marsh, vice-president and general manager of Permanente.

Permanente took options on the property last year as the prospective site for a cement plant. Although New Mexico has an annual market of more than 2,000,000 bbl., there is no cement plant in New Mexico.

During the last months Kaiser engineers have been working on the engineering of the plant, which work will be essentially completed this Spring. Exploratory drilling has been completed, topographical maps for a quarrying plan have been made, and the deposit has been evaluated in terms of cement manufacture. Major items of plant equipment—kiln, grinding mills, coolers, and crushers—have been ordered, and Permanente has negotiated a tentative contract with the Public Service Company of New Mexico for the plant's electrical requirements.

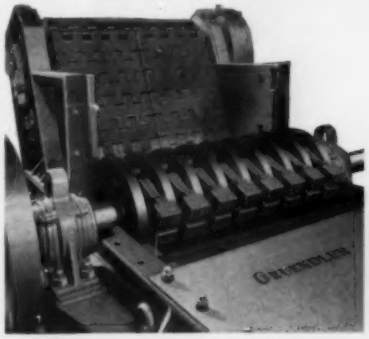
SINCE 1885—GRUENDLER QUALITY
THE BEST MONEY WILL BUY

CRUSHERS



Force feed for wet sticky ore

With non-clogging discharge. Traveling breaker plates have 20 to 30 times the life of ordinary units.



Top housing removed for inspection

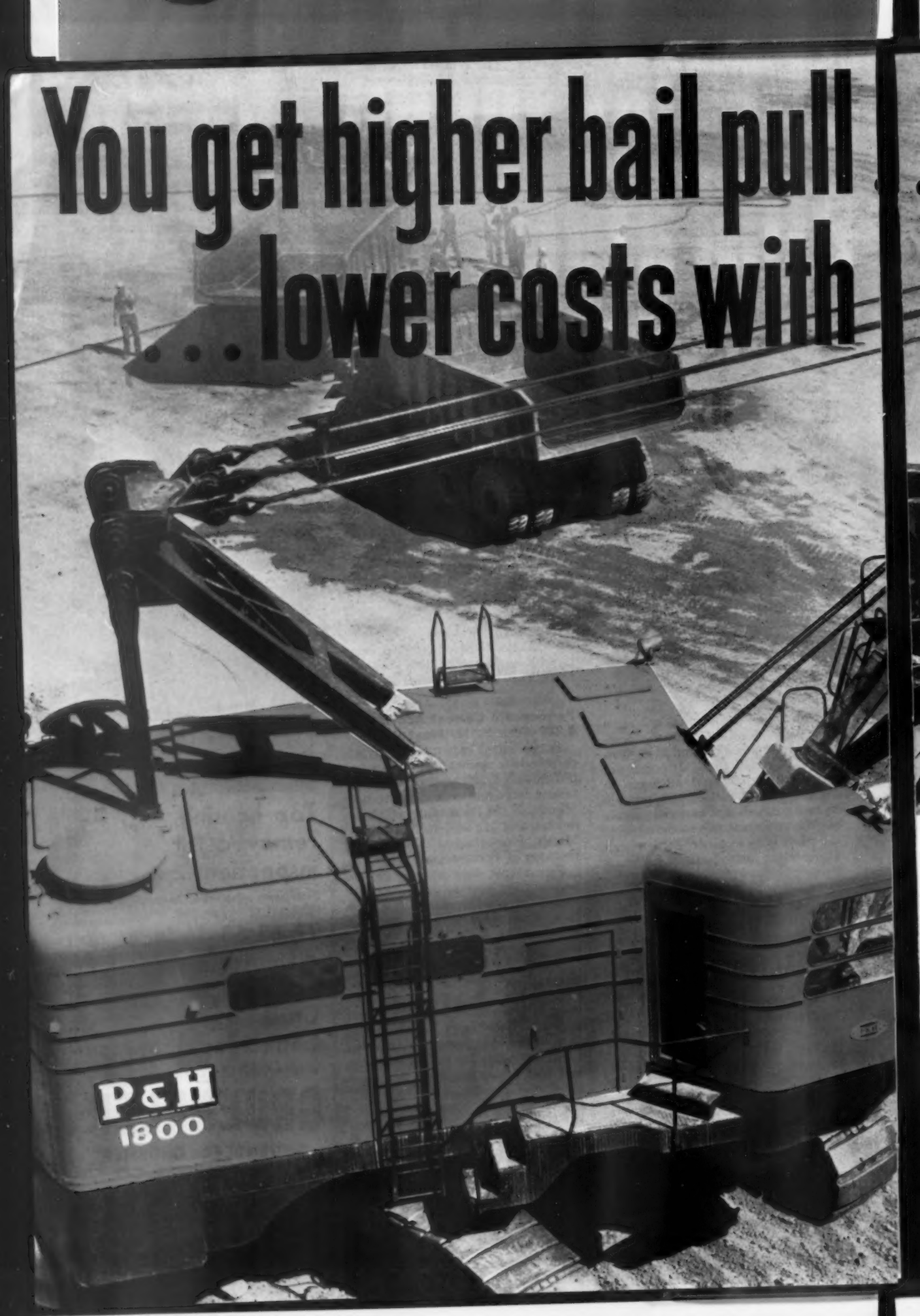
Note heavy swing impact hammers, balanced rotor and antifriction main bearing.

72,-60,-50,-36 inch diameter units
Tremendous Crushing Capacities

WRITE FOR BULLETIN

GRUENDLER

GRUENDLER CRUSHER and PULVERIZER CO.
Dept. PQ-357, 2915 N. Market St.
ST. LOUIS 6, MISSOURI


You get higher bail pull
. . . lower costs with
P&H
1800

. greater production P&H Electric Shovels

P&H scientific weight distribution gives greater stability permitting the use of higher line pull per cu. yd. of dipper capacity—resulting in greater production at lower cost.

For P&H has set the design standards for the electric shovel industry with these *exclusive features:* Magnetorque* and P&H Electronic Controls.

MAGNETORQUE . . . transmits power from the hoist motor to the dipper magnetically for faster action, and at the same time, eliminates shock and impact to the hoist gear train and motor. Response is immediate to varying load conditions.

ELECTRONIC CONTROLS . . . P&H designed and built to provide fastest action of any type of control available on electric shovels. All motions are smoother, resulting in consistently higher output.

Magnetorque and P&H Electronic Controls mean reduced maintenance and greater availability.

With P&H you get single source responsibility. Another distinct advantage experienced only by users of P&H Electric Shovels. P&H designs, manufactures and applies all electric rotating equipment specifically for electric shovel service.

*T. M. of Harnischfeger Corp. for electro-magnetic type coupling.

P&H ELECTRIC SHOVEL LINE:
3½ through 8 cu. yd. capacities.

HARNISCHFEGER

CONSTRUCTION & MINING DIVISION
Milwaukee 46, Wisconsin

• This new crushing plant of the Grannas Brothers near Altoona, Pa., can produce from 250 to 300 tons per hour with its Universal Wobbler feeder. The primary end of the plant consists of the skid-mounted feeder and Universal 3645 Impact Master Crusher. Lattice frame conveyors, 3-deck vibrating screens, double-compartment bins, chutes, and supports were designed, manufactured, and erected by Aggregates Equipment, Inc., Lancaster, Pa. This facility is owned by Chester A. and Paul E. Grannas.

X ... chosen by Experienced Producers

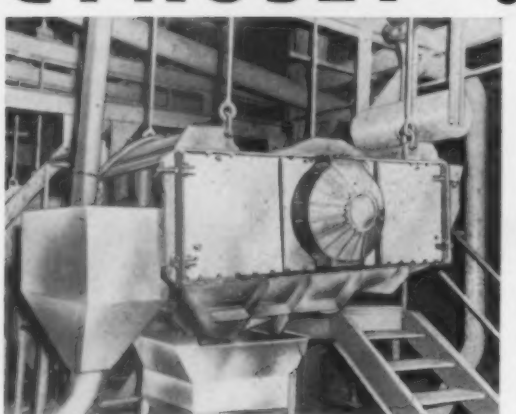
GYROSET VIBRATING SCREENS

for

SIZING

and

DEWATERING



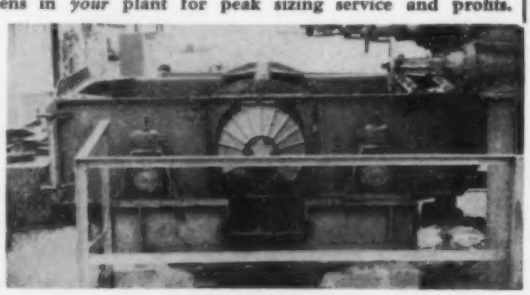
Suspended Gyroset 3′x6′ scalping oyster lime slurry at ⅛" opening.

- ***Positive Eccentric Action***
- ***Positive Stroke Adjustment***
- ***Only 2 Bearings***

Modern operators standardize on GYROSET Screens for all scalping and raw material sizing jobs.

The eccentric action of these units insures maximum screening efficiency. They can operate at high speeds, and at any degree of slope. Stroke adjustable from 0 to ⅜".

Install GYROSET Screens in *your* plant for peak sizing service and profits.



4′ x 8′ base mounted Gyroset removing foreign matter from 50% slurry — 4 mesh.

Write Today for Complete Details

PRODUCTIVE EQUIPMENT CORP.

2924 W. LAKE ST. • CHICAGO 12, ILL.

Dearborn Gravel Co., Inc. Formed by New Owners

A new concern, the Dearborn Gravel Co. Inc., has acquired the land and equipment of the Dearborn Gravel Co., a partnership of Walter G. Decker and William R. Stuard, at Lawrenceburg, Ind.

The successor corporation will continue the operations of producing sand and gravel, ready-mixed concrete, concrete block, and the sale of building materials.

Officers of the new corporation are as follows: president, Roger H. Slugg; vice-president, Mrs. W. P. Watson; secretary-treasurer, David W. Watson; and general manager, Frank E. Weismiller Jr. Walter G. Decker is a director of the corporation.

Ben E. Teschner Appointed Monolith Sales, Service Mgr.

Ben E. Teschner has been appointed sales and service manager of the Monolith Portland Cement Company, Los Angeles, succeeding the late R. B. MacNee.

Mr. Teschner has been with the company for 29 years, having served as assistant sales manager since 1943. He joined Monolith in 1928, and for the next nine years was the firm's Northwest representative, covering Washington, Oregon, western Idaho, and British Columbia. In 1938 he transferred to Los Angeles as sales representative.

Ideal's Lake Charles Terminal To Be Completed This Year

A contract has been awarded by the Ideal Cement Company, Denver, to the Fegles Construction Company of Minneapolis, Minn., for the construction of a terminal at Lake Charles, La. The amount of this contract is approximately $1,035,000, and the total cost of the facility is expected to be $1,750,000.

Completion of the terminal in the fall of 1957 will enable Ideal to provide the best possible service to customers in this area, which has had a remarkable growth since 1945 because of the development of its natural resources.

Euclid tractors and scrapers

lower stripping costs for mines and quarries

Tremendous power, speed and maneuverability make the 436 h.p. Euclid TC-12 Twin-Power Crawler a top performer in heavy duty mine and quarry work. No other tractor matches it for low cost production in stripping overburden, clearing, stockpiling, building haul roads and other big tractor jobs.

Euclid scrapers have struck capacities from 7 to 24 cu. yds. with engines ranging from 143 to 518 h.p. The complete line, including both two axle and three axle models, has hydraulic lever action that eliminates down-time caused by cable breakage. Good maneuverability and fast travel speed reduce cycle time . . . help move more loads and more yards for lower cost stripping operations.

Check the many advantages of "Eucs" for your operation . . . have a Euclid dealer show you why ***Euclids are your best investment.***

●

EUCLID DIVISION, GENERAL MOTORS CORP., Cleveland 17, Ohio

Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE

EUCLID

C.I.M.A. Officers Elected—Killebrew Named President To Succeed Lindsay

The Construction Industry Manufacturers Association at its annual meeting in January elected Clarence E. Killebrew, president. Mr. Killebrew is vice-president of the Clark Equipment Company at Benton Harbor and Buchanan, Mich. He is in charge of the sale and marketing of all Clark products bearing the "Michigan" trade name.

Mr. Killebrew's connection with the construction industry goes back many years. Prior to 1952 he was in charge of sales at The Frank G. Hough Company at Libertyville, Ill., and before that he was employed by the J. D. Adams Company, now a part of LeTourneau-Westinghouse Company. Mr. Killebrew is a graduate engineer from Alabama Polytechnic Institute. He succeeds Kenneth Lindsay of the Iowa Manufacturing Company, Cedar Rapids, Iowa, who has just completed his second term of office after organizing the tremendous Road Show of 1957.

Other officers of the Construction Industry Manufacturers Association are: first vice-president, Boyd S. Oberlink, vice-president, Tractor Group, Allis-Chalmers Manufacturing Co.; second vice-president, Henry Barnhart, vice-president, Baldwin-Lima-Hamilton Corporation; treasurer, P. H. Birckhead, vice-president, Bucyrus-Erie Company.

Directors elected for a three-year term are the following: P. H. Birckhead, Bucyrus-Erie Company; C. R. Boll, Cummins Engine Company, Inc.; James Drain, Joy Manufacturing Company; G. A. Gilbertson, The Frank G. Hough Company; D. W. Lehti, Link-Belt Speeder Corporation; Ray McLean of The Jaeger Machine Company; and Carl R. Rolf, Pioneer Engineering Works, Inc.

Incumbent directors whose terms expire (in 1958) are D. D. Barnes, Smith Engineering Works; John E. Carroll, American Hoist & Derrick Company; T. R. Ellis, The Texas Company; Stuart R. Ives, Armco Drainage & Metal Products, Inc.; Clarence E. Killebrew, Clark Equipment Company; A. J. Lichtinger, The Wellman Engineering Company; Harald T. Reishus, International Harvester Company. Terms of the following expire in 1959: Henry Barnhart, Baldwin - Lima - Hamilton Corporation; Ben F. Lease, Athey Products Corporation; J. W. McCoy, E. D. Etnyre Company; R. E. Montgomery, The B. F. Goodrich Company; Boyd S. Oberlink, Allis-Chalmers Manufacturing Company; Virgil L. Snow, General Motors Corporation, Euclid Div. L. G. Schraub, Union Wire Rope Corporation, was elected for a 2-year term.

Stussy Elected President Of Minn. Agstone Producers

Officers were elected at the annual meeting of the Minnesota Agricultural Limestone Producers Association on February 15.

The following members were elected to head the organization: president, Donald Stussy, Stussy Construction Company, Mantorville; vice-president, Lee Osmundson, Osmundson Brothers, Adams; and secretary-treasurer, Dean Gaulke, Patterson Quarries, St. Charles.

Directors chosen include the following: Charles Bryan, Bryan Rock Products, Inc., Shakopee; Henry Pederson, Pederson Bros., Harmony; and Virgil Smith, Heintz & Smith, Caledonia.

HERMAN LIEBREICH has been appointed district manager for the Southwestern Portland Cement Company at El Paso, Tex. He succeeds William R. Blair, retired.

DUST *was a problem*

50 TONS of DUST discharged in 24 hrs.

"Headache" for producer of lightweight aggregate.

Dust Problem Licked!

OVER 90% free of effluent dust

Producer and community both happy!

"SEEING IS BELIEVING"—the above before-and-after views amply prove the efficiency of Southern's new wet type dust collector.

We had a "king size" problem in our own plant, making lightweight aggregates for the building trade. Extreme heat plus corrosive and abrasive action caused a 50,000 c.f.m. offensive effluent from six stacks. Naturally our neighbors complained!

We tried a lot of collectors, but all failed to stand up against the combination of heat, acids and corrosion.

Finally we designed and built our own—it has passed every test for effectiveness and durability in controlling atmospheric pollution.

If you have a similar problem, contact us for full information without obligation.

SOUTHERN LIGHTWEIGHT AGGREGATE CORPORATION
Process Engineering Division • Box 9138, Richmond 27, Va.

THE NEW JOY RP-125 AIRVANE COMPRESSOR

THE *Smoothest* 125 CFM ROTARY PORTABLE YET

CONTRACTORS: Want a small portable that starts easy, runs smooth, and keeps on running? Here it is—the Joy 125. And here's why:

THERMAL BY-PASS OIL CIRCULATING SYSTEM—provides immediate lubrication and temperature control under *all* weather conditions.

SPLINE COUPLING—a direct drive system that does away with clutches for most efficient power transmission.

COMPACT BODY AND FRAME—easy to move from job to job—tows easily at highway speeds . . . low center of gravity keeps the 125 stable over rough job locations—and, although it's compact, there's plenty of room inside for easy maintenance.

Find out more about the smoothest 125 rotary on the market . . . see your Joy Distributor or write to ***Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.*** In Canada: *Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*

WSW C 6479-157

JOY... EQUIPMENT FOR CONSTRUCTION... FOR ALL INDUSTRY

Write for free bulletin 157-26

PORTABLE AND SEMI-PORTABLE AIR COMPRESSORS • ROCK DRILLS • WAGON DRILLS • DRILL BITS • BACKFILL TAMPERS • SPADERS
PAVING BREAKERS • SHEETING DRIVERS • DRIFTERS • PORTABLE HOISTS • FANS AND BLOWERS • PORTABLE SAFETY LIGHTING

Number of Paving Grades Cut to 5 by Action Of Asphalt Institute

In another move to streamline road paving methods, The Asphalt Institute has adopted a reduction in the number of grades of paving asphalts from nine to five.

In making the announcement, J. E. Buchanan, president, stated that the Institute's action followed a series of explanatory discussions with asphalt users, highway officials, and refinery representatives.

Four basic paving grades now officially recognized by the Institute are listed as 60-70, 85-100, 120-150 and 200-300 penetration. A fifth grade of 40-50 penetration asphalt is recommended for special and industrial uses.

"The advantages of the reduction in grades are evident," said Mr. Buchanan. "It will simplify the storage and handling problem at the refinery and will certainly make these standard grades more readily available from all asphalt refiners. In turn, the user can reasonably expect better service in delivery and superior distribution of the paving product."

The need for general streamlining of materials specifications has long been recognized by highway officials. The tremendous pressures exerted by the multibillion-dollar federal road program has made this a matter of immediate concern. This fact was recognized by A. C. Clark, assistant commissioner of public roads, who indicated to the Institute that he would ask for a determined effort on the part of all materials suppliers to strive for simplification of specifications, without sacrificing quality.

Eliminated from the table of grades by the Institute were those in the intermeditae ranges: 50-60, 70-80, 100-120, and 150-200 penetration. The penetration value defines the consistency of the asphaltic cement, ranging upward from extremely hard to very soft. The Institute is satisfied that the skip-grading will not affect the quality of the resulting mix.

The reduction in the number of grades of paving asphalts followed similar action three years ago when the Institute initiated a reduction in grades of emulsified asphalts from six to four.

A project committee of the Institute is currently working toward a reduction in grades of the rapid-curing, medium-curing, and slow-curing groups of liquid asphalts.

Natl. Gypsum Adds Products, Reorganizes Sales Setup

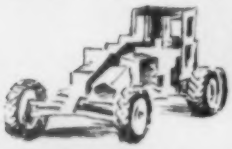
The National Gypsum Company has entered the commercial construction field "in a major way," and has also intensified its industrial sales program, devoted to products used in various manufacturing processes. Several new products have been developed by research scientists.

Melvin H. Baker, board chairman, stated that the moves were dictated by the current home building decline which has cut into National Gypsum's sales.

Acoustical and corrugated asbestos, and roof deck products had been sold by separate sales forces. These have now been combined to form the new Commercial Trade Sales Division, headed by J. W. Duncan.

Seven new commercial and industrial sales divisions have been set up. The new commercial sales divisions and their managers are as follows: Eastern, Walter J. Wielgus; Southern, John B. Garland; Southwestern, Charles C. Jordan Jr.; and Midwestern, H. William Orth. Amos B. Miner, general industrial sales manager, announced the following new industrial division sales managers: Eastern, John E. Kelly Jr.; Western, Robert S. Hamme; and Southern, Walter S. Hamme.

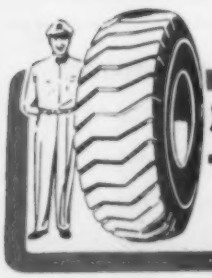
Get exactly the tread design your job requires at SOUTHERN TIRE



At your service—the world's most complete range of tire sizes and tread designs in one shop—now at Southern Tire Company!

Whether you operate light or heavy equipment, Southern Tire can supply the tread design and size you need —and save you money at the same time. Superior equipment, including the greatest range of tire sizes and tread designs in the country, and the world's largest and finest three-sectional retreading mold, enables Southern Tire to retread any tire, regardless of growth, without buffing to the breaker strips. This, plus Southern Tire's long experience and use of finest tread rubber, assures you of guaranteed new tire service—and the tread design you need—at less than half new tire cost.

All special service tire sizes from 1100 x 24 to 33.5 x 33
Call your favorite dealer and specify Southern Tire retreads



SOUTHERN TIRE COMPANY
1414 Broadway
SHEFFIELD, ALA.
Phone Collect
EV 3-2312

Cement Mixer Takes 60° Grade, one of many Four Wheel Drive tests. In all these grueling tests, Cities Service Lubricants make the grade and then some! They've done it for 20 years.

Early Four Wheel Drive Truck is one of vehicles in firm's museum. Founded in 1910, the company's first production amounted to 12 vehicles. Today, it is thousands yearly.

Toughest trucks made— Toughest lubricants used!

Four Wheel Drive Auto Company has been Cities Service customer for 20 years!

If you think things are tough on the trucks at your construction job or quarry, you should visit the Four Wheel Drive plant at Clintonville, Wisconsin.

There you'd see famous Four Wheel Drive trucks going through tests tougher than they'll probably ever meet on your job or anyone else's.

Ditto for the Cities Service Lubricants that Four Wheel Drive uses.

For what could be tougher on a truck and its lubricants than grinding up a hill in loose sand . . . sinking axle deep in a mud bath . . . driving diagonally across a washboard test ground . . . and climbing a 60 degree grade of dirt or gravel?

Make no mistake, Cities Service Lubricants meet the test . . . and have for the past 20 years at Four Wheel Drive Auto Company.

So it stands to reason that however tough the terrain and conditions on *your* job, Cities Service C Series Motor Oils and Trojan H Multi-Purpose Grease will more than make the grade . . . especially if you follow the expert recommendations of your Cities Service Lubrication Engineer.

For all the details, call the nearest Cities Service office, or write: Cities Service Oil Company, Sixty Wall Tower, New York 5, New York.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

KOEHRING WORK CAPACITY *in action . . .*

At a Mid-West quarry, ¾-yard 305 loads out lannon stone. It's another in a new series of Koehring machines, and is similar in basic design to the modern new ½ and 1-yard excavators. Has full complement of standard attachments, on crawlers and rubber (see capacity chart below).

Plenty of pick-up — At an isolated camp in the Sierras, pumps and other machinery had to be unloaded and set in place. The heavy units required careful, precision-handling — and plenty of lift capacity. Above photo shows how they did it with a Koehring 15-ton 205 truck crane.

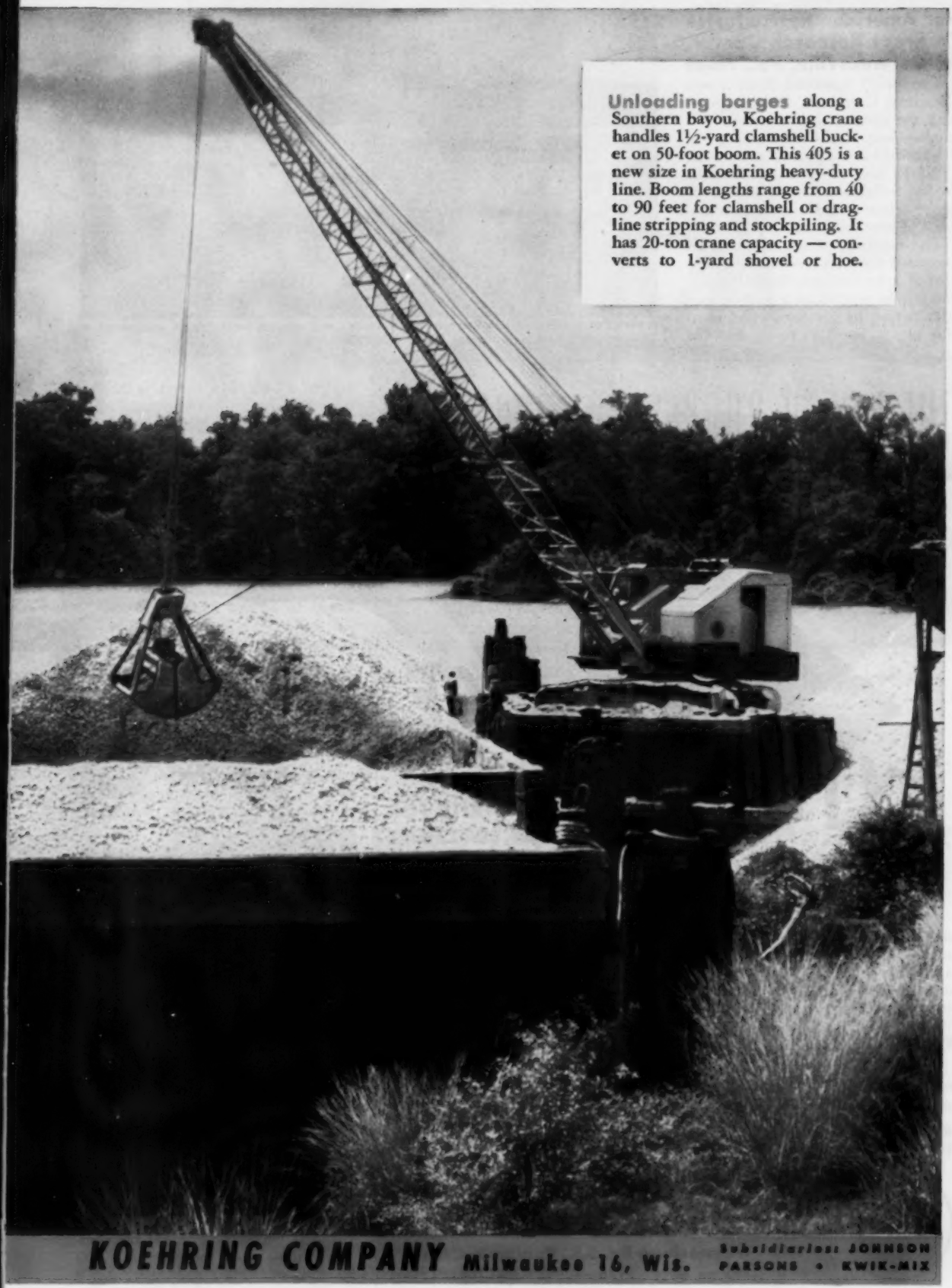
Here are some figures that will interest you:

KOEHRING MODEL	SIZE DIPPER	LIFT CAPACITIES (Crawler ratings based on 75% of tipping load. Rubber-tired machines — 85% of tipping load.)	
205 CRAWLER	½-Yd.	20,000 lbs.	at 10-foot radius
205 ON RUBBER	½-Yd.	30,000 lbs. 13,700 lbs.	at 12-foot radius at 20-foot radius
305 CRAWLER	¾-Yd.	30,000 lbs.	at 12-foot radius
305 ON RUBBER	¾-Yd.	30,000 lbs. 15,800 lbs.	at 10-foot radius at 30-foot radius
405 CRAWLER	1-Yd.	40,000 lbs.	at 12-foot radius
605 CRAWLER	1½-Yds.	72,300 lbs.	at 12-foot radius
1205 CRAWLER	3-Yds.	190,000 lbs.	at 13-foot radius

Want more information? Call Koehring distributor today.

K693

Big producer — Deep stripping uncovered a heavy coal vein at this Eastern mine. Working on mine floor, a Koehring 605 shovel loaded out the coal, and dumped into trucks spotted on upper level. Depending on materials, and type of operation, the 605 can be used with standard 22-ft. shovel boom and 16½-ft. dipper-sticks — or with high-lift 28-ft. boom and 23-ft. dipper-sticks.



Unloading barges along a Southern bayou, Koehring crane handles 1½-yard clamshell bucket on 50-foot boom. This 405 is a new size in Koehring heavy-duty line. Boom lengths range from 40 to 90 feet for clamshell or dragline stripping and stockpiling. It has 20-ton crane capacity — converts to 1-yard shovel or hoe.

KOEHRING COMPANY Milwaukee 16, Wis. Subsidiaries: JOHNSON • PARSONS • KWIK-MIX

No. American Refractories To Erect Research Center At Curwensville, Pa., Plant

The North American Refractories Company, Cleveland, Ohio, is planning the construction of a new Research Center at Curwensville, Pa. Scheduled for completion in October, 1957, the new center will be used for the co-ordination of all phases of quality control and for the development of new products.

The building, which will cost an estimated $300,000, will have a floor area of approximately 12,000 sq. ft., and is to be erected on a tract of land adjacent to the company's Curwensville plant. Facilities to be provided at the center will include engineers' offices, a library, a chemical laboratory, a drafting room, a general work room, a high bay insulated test room, and locker and shower rooms.

A sketch of North American Refractories Company's new research center, to be constructed at Curwensville, Pa., at an estimated cost of $300,000.

North American Refractories has plants in Pennsylvania, Ohio, Kentucky, and Missouri for the production of silica brick, fire clay brick, and specialties, including various types of mortars, bonds for silica and fire clay brick, castables, and plastics.

Ideal to Spend $1,000,000 To Build Distribution Facility

Plans have been made for the establishment of a distribution plant and packaging terminal for the Ideal Cement Company at the edge of West Sacramento, Calif., according to Cris Dobbins, president. Mr. Dobbins stated that a temporary terminal will be put into operation in Yolo County pending the completion of the highly mechanized permanent plant.

This project, which is expected to cost more than $1,000,000, will be a part of an expansion program which includes the construction of a 3,000,000-bbl. addition to the plant at Redwood City, Calif.

Because of Redwood City's deep water facilities and the fact that the new distribution plant is on the Sacramento River, it was decided to use barge transportation to ship cement from the Redwood City plant to the Yolo outlet.

In an announcement issued by the Mississippi Valley Portland Cement Company, it was stated that the multimillion-dollar plant the firm is handling on the Yazoo River, near Vicksburg, Miss., now has a revised planned capacity of 2,000 bbl. per day, rather than the original 1,500 bbl.

THE KEY TO SUCCESSFUL SCREENING

ALL NEW IN DESIGN

WRITE FOR NEW BROCHURE

HANCO ELECTRIC SCREEN HEATERS

eliminate "blinding" and "clogging" of wire screens, thus making beating and brushing practices obsolete. Designed for heavy-duty service, HANCO Heaters with Quick Change Attachments are quickly installed and easily adapted to new or existing screen installations with such features as large capacity secondary terminal, a 16 step temperature changer, dust enclosure compact, exclusive overload protector.

EXCLUSIVE SCREEN TENSIONING DEVICE
(Replaces Existing Parts)

Fiberglass plate — insulates conductor from frame — eliminates draw bolt insulators.

Wedge-shaped conductor bars offers positive contact with cloth.

Representatives throughout the World.

Hanco

F. R. HANNON & SONS

1605 Waynesburg Rd. S.E., Canton 7, Ohio
ENGINEERS — Since 1926 — MANUFACTURERS

A 6-yd. 150-B loads a hauling unit at a limestone quarry near Marblehead, Ohio.

IN OHIO . . . AND THE WORLD OVER

Profitable performance on toughest quarry jobs with Bucyrus-Erie Electric Shovels

From boom point to treads, a Bucyrus-Erie electric shovel is a *heavy-duty* excavator designed for sustained high output in toughest rock digging.

Its low maintenance features include an advanced-design front end that combines light weight with great strength, eliminates deadweight that slows operation and causes excessive wear on main machinery parts. A rigid boom with widespread boom feet easily carries extreme digging stresses.

Ward Leonard variable-voltage control results in high speed acceleration and deceleration, provides extra torque and power when it's needed most.

Follow the lead of many other successful quarry operators — put a Bucyrus-Erie electric shovel in your pit to keep costs down and output high.

114L56C

BUCYRUS-ERIE COMPANY South Milwaukee, Wisconsin

Industry Personalities

JACOB B. ZOOK, plant manager for the Lehigh Portland Cement Company, was awarded the 1956 Engineering Award by the Erie County Chapter of the New York State Society of Professional Engineers. Mr. Zook was cited for his contributions to the engineering profession and for his activities in the local chapter.

The Portland Cement Association has announced organization changes affecting five members of its Promotion Division, under the supervision of James D. Piper, vice-president for promotion.

Effective January 15, MARTIN A. LEWIS, assistant to the vice-president for promotion, Portland Cement Association, has been named to the additional post of co-ordinator of interstate highway promotion. Assisting on technical aspects of this program will be HOMER A. HUMPHREY, who was named senior highway consultant. Mr. Humphrey was formerly manager of the Association's personnel training classes, a position now assumed by WARREN G. BURRES.

LEO H. CORNING, formerly director of promotion planning and engineering services, was named to the newly-created position of chief consulting structural engineer. His previous post was assumed by GEORGE H. PARIS, who previously served as assistant to the vice-president for promotion.

J. W. Riggle

JOHN W. RIGGLE has been appointed assistant to the general superintendent of the Louisville Cement Company, Louisville, Ky. R. E. HAILSTONE was made assistant superintendent of the Brixment plant and W. C. WEEKS was named plant engineer.

Mr. Riggle was formerly superintendent of the Brixment plant and the quarry at the Speed, Ind., plant. He will retain these duties in addition to his new assignment. From 1948 to 1953, he was superintendent of the company's lime plant at Milltown, Ind. He has also worked in

R. E. Hailstone

W. C. Weeks

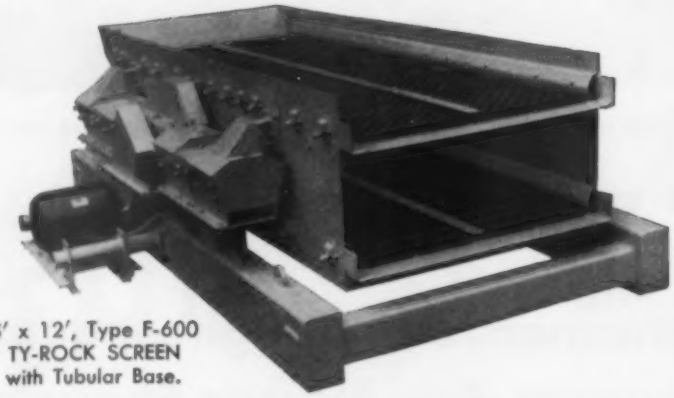
the engineering and construction departments of the company.

Mr. Hailstone has been associated with Louisville Cement since 1952, and has served as plant engineer and shop engineer.

Mr. Weeks, formerly quarry engineer, started in the company's engineering department in 1954.

J. D. Kaufman has been appointed to the position of vice-president in charge of operations by the board of Pacific Cement and Aggregates, Inc., San Francisco, Calif.

FOR PROFITABLE SCREENING USE



5′ x 12′, Type F-600 TY-ROCK SCREEN with Tubular Base.

TYLER VIBRATING SCREENS AND TYLER WOVEN WIRE SCREENS

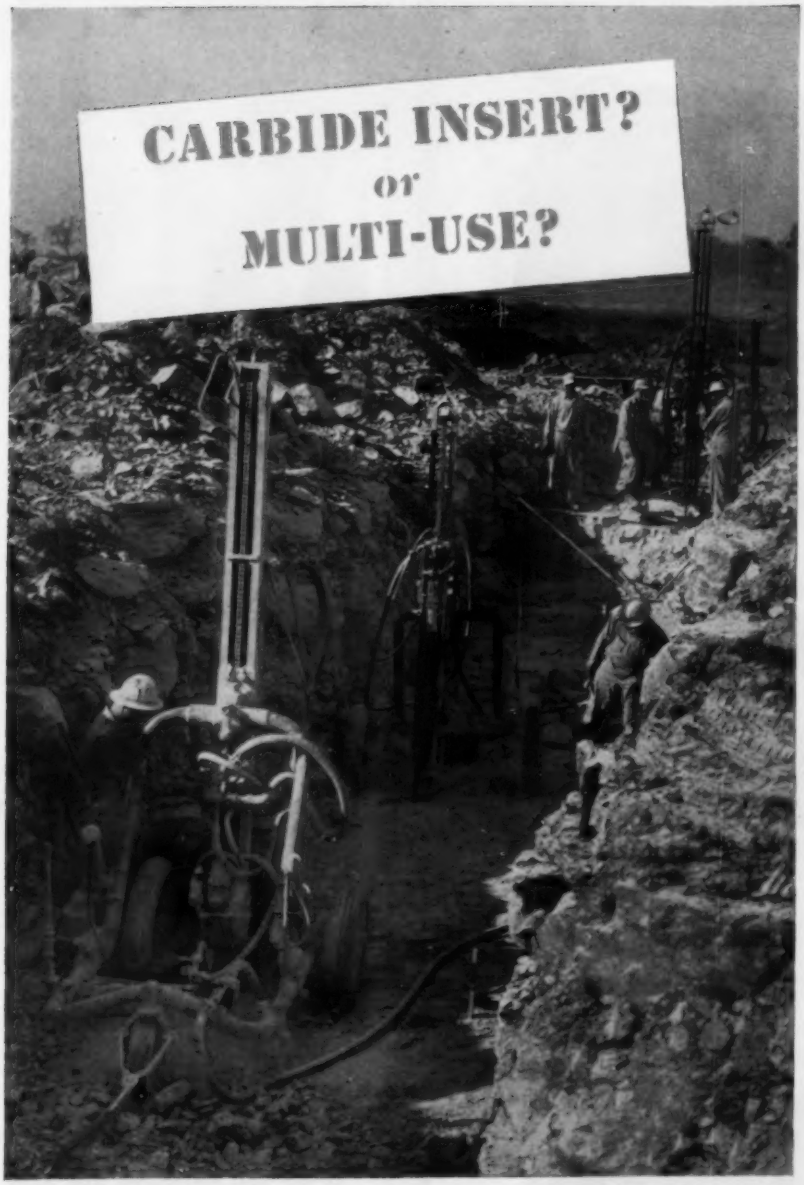
There is a Tyler Vibrating Screen for every sizing and dewatering job. Tyler Screens are noted for the huge tonnages handled with top efficiency and low cost per ton.

Tyler Woven Wire Screens are made in all meshes and metals in over 10,000 different specifications. Ton-Cap and Ty-Rod Screens with the long-slot openings provide the greatest capacity for a given discharge area.

THE W. S. TYLER COMPANY
CLEVELAND 14, OHIO
Manufacturers of Woven Wire Screens and Screening Machinery

We get the lowest cost per foot-of-hole with TIMKEN® multi-use bits

. . . Reports McDowell and McDowell Construction Co.



LOCATION: Industrial plant site, Nashville, Tenn.

OPERATING CONDITIONS: Medium hard limestone.

DRILLING through medium hard limestone on a 232-acre industrial plant site, McDowell and McDowell Construction Co. found they got the lowest cost per foot-of-hole with Timken® multi-use bits.

Under many drilling conditions you, too, can get the greatest saving with Timken multi-use bits. They will give you the lowest cost per foot-of-hole when full increments of steel can be drilled in ordinary ground.

But multi-use bits may not always be your best bet.

In hard abrasive ground, for instance, Timken carbide insert bits will give you higher speeds and greater economy. And for extremely deep holes, constant-gauge holes, or small diameter blast holes, Timken carbide insert bits are again your best bet.

Your drillers will save time with Timken rock bits—multi-use or carbide insert—because they're interchangeable in the same thread series. Dozens of Timken rock bits fit the same drill steel. Change them as fast as the ground changes.

And you get these extra advantages with all Timken rock bits: 1) they're made from the Timken Company's own electric furnace fine alloy steel; 2) they have the special shoulder union developed by the Timken Company to protect threads from drilling impacts.

Find out which Timken rock bit is best for your needs. Call or write the Timken Rock Bit Engineering Service, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

your best bet for the best bit for every job

Timken threaded multi-use rock bit

Timken threaded carbide insert rock bit

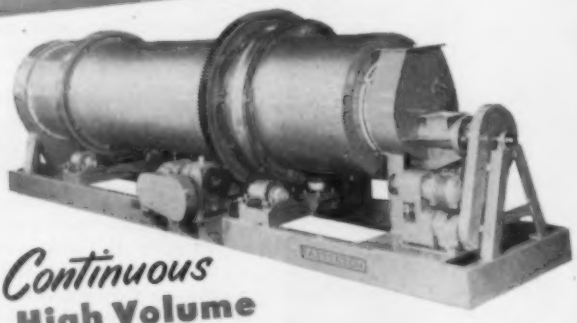
PATTERSON

SATISFACTORY MACHINERY FOR—

Continuous

Heavy Duty GRINDING

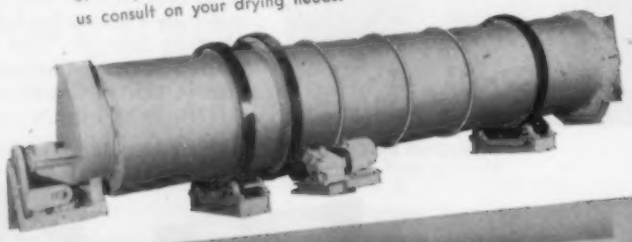
Continuous feed and continuous discharge with the PATTERSON Tube Mill provides steady grinding production under the most rugged conditions—at record lows in cost! Write us.



Continuous

High Volume DRYING

PATTERSON Rotary Dryers give you uniform drying of materials with continuous feed and discharge, exact control of temperatures, and excellent operating economy. Let us consult on your drying needs.



The Patterson Foundry and Machine Company

A Subsidiary of Ferro Corporation

East Liverpool, Ohio, U. S. A.

The Patterson Foundry and Machine Company, (Canada) Limited

Toronto, Canada

MONTREAL

KENT B. DIEHL SR., president of the Texas Portland Cement Company, Orange, Tex., has been elected president and chairman of the board of the New Mexico Portland Cement Company which is being constructed at Las Vegas, N. M. The plant is scheduled to go into operation on February 1, 1958, with an initial capacity of 2,500 bbl. per day.

R. C. Rial

The promotion of RICHARD CLYDE RIAL to the position of assistant sales manager of the Pittsburgh Coke & Chemical Company's Cement Division has been announced.

Mr. Rial joined Pittsburgh Coke & Chemical in 1941 as auditor of the company's Activated Carbon Division. Subsequently he held various other positions and in 1949 he joined the company's Cement Division in the sales department. Prior to his new appointment, Mr. Rial was assistant to Cement Division sales manager, J. M. Murray.

JAMES E. CHRISTIANSEN was recently promoted from the post of traffic manager of the Marquette Cement Manufacturing Company to general traffic manager for the company. He succeeds CLYDE M. TUTTLE, who retired on February 1 after 43 years of service in Marquette's Traffic Department.

J. E. Christiansen

R. C. Flood

It was also announced that ROBERT C. FLOOD will be in charge of Marquette's new sales office at 2030 West Wisconsin Avenue, Milwaukee. Mr. Flood is sales manager for the company's Wisconsin Division. In making the announcement, S. L. Cribari, Marquette's vice-president in charge of sales, said that the new office would be opened in Milwaukee to facilitate sales of the output of the company's new 1,250,000-bbl. producing plant in Milwaukee.

New Barber-Greene conveyor, erected in just 2½ days after the fire, boosts tonnage from 250 tons a day to 250 tons per hour.

Conveyor destroyed by fire on Monday
New one operating Friday

On Monday fire roared up a wooden conveyor owned and operated by a Milwaukee cement block company. Out of the devastation only the wooden "A" frames remained. Without the conveyor, production was at a standstill.

At 6:00 the following morning the owner called the local Barber-Greene distributor to see what could be done. Drawing from his own stock of standardized conveyor components—trusses, idlers, drives—the distributor was able to rush all the necessary components to the burned out plant by noon. And by Friday morning the new conveyor was erected and operating.

This fire and the quick return to normal operations point up the basic advantages of Barber-Greene *standardized* components. These advantages include: quick delivery from stocks of standardized components . . . elimination of engineering time required when building "custom-made" conveyors . . . and fast, easy erection.

Trouble-free operation is an additional benefit of the factory aligned and adjusted drives and terminals. Flexibility in shortening or lengthening your conveyor is another plus.

Write for information on Barber-Greene *Standardized* conveyor components

56-12-PE

Barber-Greene BG

AURORA, ILLINOIS, U.S.A.

CONVEYORS . . . LOADERS . . . DITCHERS . . . ASPHALT PAVING EQUIPMENT

Expansion at Hercules To Increase Capacity to 3,300,000 Bbl. Annually

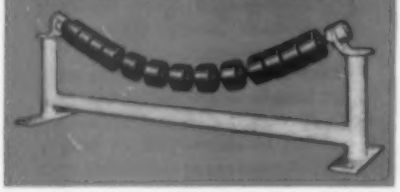
The new kiln being installed at the Hercules Cement Corporation's plant at Stockertown, Pa., which is expected to be in operation in April, will help to boost capacity to 3,300,000 bbl. annually, according to a company spokesman. Annual output in 1952, when the firm's major modernization program was launched, was about 2,200,000.

It was indicated that the largest part of the program will be finished by the end of 1958. During 1957 about $1,500,000 will be spent on new facilities and modernization, compared with about $4,500,000 in 1956.

Capital expenditures totaling $4,363,000 were approved by the directors of the Marquette Cement Manufacturing Company for the installation of cost-saving equipment at plants in Superior, Ohio, Nashville, Tenn., and Rockmart, Ga. This brings to $9,744,000 the appropriation authorized for 1957 improvements.

A satisfied customer writes about JOY LIMBEROLLER Belt Conveyor Idlers:

LIMBEROLLERS, at work on conveyor at Massachusetts Broken Stone Company.



"Early in 1955 we decided to try four Joy Limberollers on the No. 1 slope conveyor from the primary gyratory crusher in the quarry.

"This conveyor carries the product of the primary crusher set at about 5', on a 12 degree slope and running at about 450 feet per minute. Originally designed for 400 ton per hour capacity, there have been surge loadings of twice this amount.

"While the balance of the conveyor system is the enclosed gallery type, the No. 1 slope conveyor was not fully completed before the start of production season and consequently ran all year exposed to all kinds of weather.

"The Limberollers have carried a few hundred thousand tons of heavy stone with absolutely no maintenance. On the basis of this record we have placed repeat orders."

Richard Robinson

Richard Robinson, Treasurer
MASSACHUSETTS BROKEN STONE COMPANY

The Joy Limberoller resists dust, abrasion, corrosion and material buildup. Resilient discs on a flexible steel cable conform to load and cushion the belt. Only two bearings are used and these are up out of the dirt zone. Get details from *Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.* In Canada: *Joy Manufacturing Company (Canada) Ltd., Galt, Ontario.*

Write for FREE Bulletin 136-26

Consult a Joy Engineer

for AIR COMPRESSORS • ROCK DRILLS
BLAST HOLE DRILLS • HOISTS • CONVEYORS
FANS • EQUIPMENT FOR TUNNELS,
MINES, QUARRIES, OIL FIELDS.

WBW L6358-136

JOY

Since 1851... Over 100 Years of Engineering Leadership

Obituaries

W. Leo Matthes, 62, superintendent of the Alpha Portland Cement Company plant at Manheim, W. Va., died on January 14 at a hospital in Morgantown, W. Va.

Mr. Matthes entered the employ of the Alpha Portland Cement Company in 1916 as plant engineer at the Catskill plant. He became superintendent of the Manheim plant in 1922. He was the cement representative on the West Virginia State Safety Council and a member of the West Virginia Manufacturers Association.

Vernon C. Moynes, 66, veteran employee of the Canada Cement Company, and one of the founders of the Canadian Construction Association, died unexpectedly on February 2. He was made a director of Canada Cement upon his retirement last February.

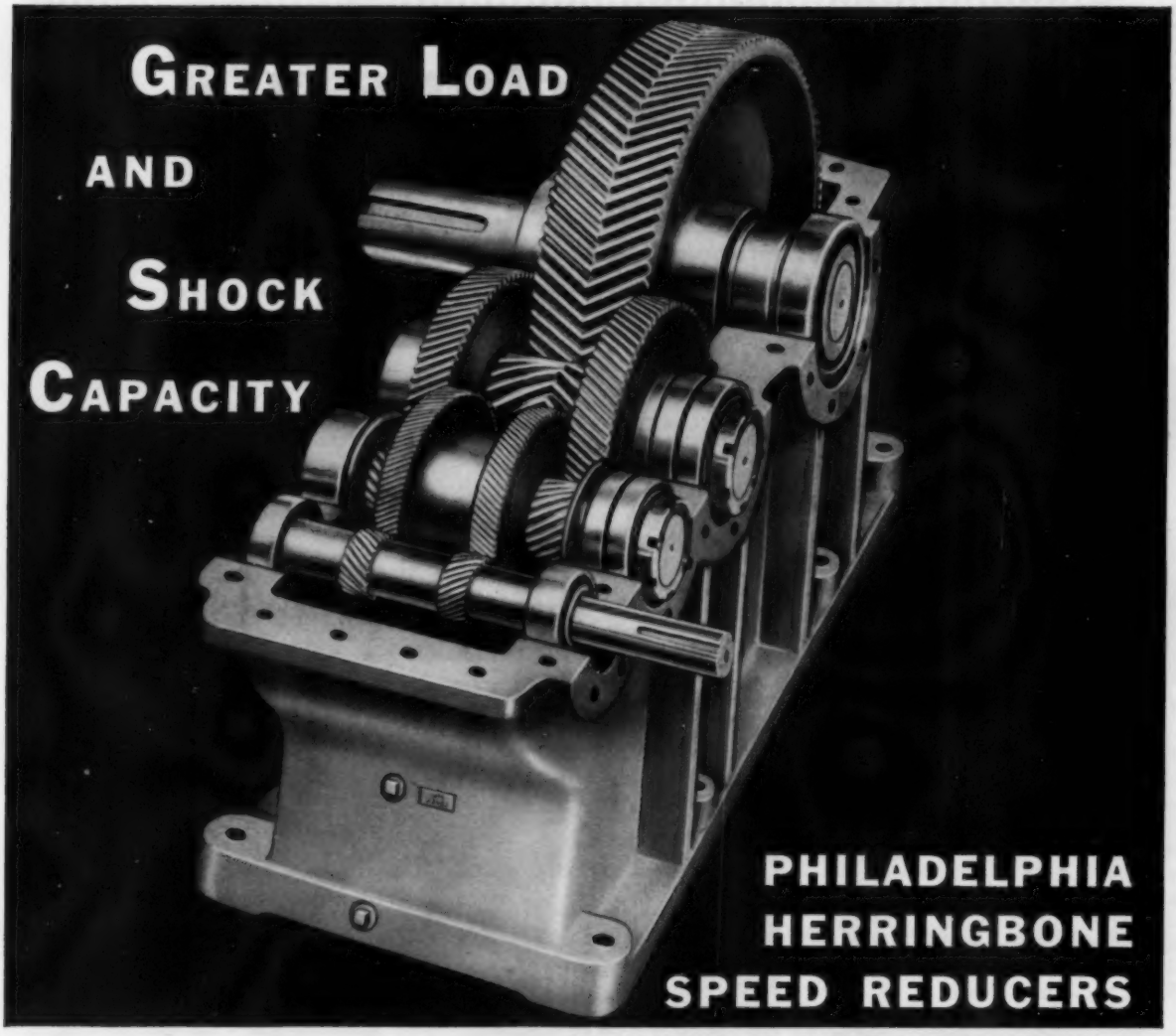
Carleton J. Lewis, 62, president of the Buffalo Gravel Corporation, Buffalo, N. Y., died of a heart attack in his home on January 26. He was a member of several civic groups in Buffalo.

Arthur Lapres, who was associated with the Canada Cement Company for many years, died recently in Montreal, Que. He was district sales manager for the company at the time of his retirement in 1951.

Oliver D. Harvard, 84, former superintendent of Portland Cement Company plants in Egypt, Pa., and Norfolk, Va., died on January 11 in Allentown, Pa. He also was the inventor of a widely used coal measuring instrument.

Edwin G. Beske, 57, owner of the Atwater Sand and Gravel Company, Atwater, Minn., died recently at his home.

Robert W. Ingram, president of the Acme Gravel Company, the San Marcos Gravel Company, the San Antonio Silica Sand Company, and the Acme Iron Works, San Antonio, Tex., died recently at a hospital in Galveston. He was a member and a director of the Texas Aggregate Association, and was also active in the American Road Builders and related groups.



...PAY OFF IN HIGH EFFICIENCY GREATER STRENGTH, LONGER LIFE

Where you have a machine drive that requires high horsepower speed reduction under grueling load and shock conditions, specify Philadelphia Continuous Tooth Herringbone Speed Reducers . . . Built to withstand the most severe round-the-clock operation, these Reducers offer you extra service dividends through high efficiency, greater strength, and years of quiet, trouble-free operation.

Herringbone and Helical Gear teeth are precision cut for maximum tooth contact and overlap . . . assure uniformity of torque and freedom from damaging vibration.

Gears and Pinions are arranged symmetrically within rugged, compact housings, which assures equal loads on each shaft bearing, and minimizes the most severe stresses. Fully enclosed, self-contained housings prevent oil leakage . . . no parts such as glands require adjustment . . . more than ample oil reservoir assures cool correct lubrication. Available in single, double and triple reductions covering a range of ratios from 1.75:1 up to 292:1, Philadelphia Herringbone Reducers provide optimum performance at minimum cost.

Send for new 48-page catalog . . . contains complete design and application data on these widely used, highly efficient units.

phillie gear®

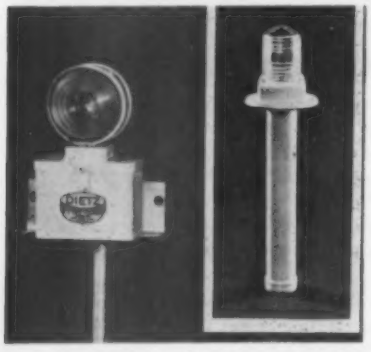
PHILADELPHIA GEAR WORKS, INC.
ERIE AVE. & G STREET, PHILADELPHIA 34, PENNA.
Offices in all Principal Cities

INDUSTRIAL GEARS & SPEED REDUCERS • LIMITORQUE VALVE CONTROLS • FLUID MIXERS • FLEXIBLE COUPLINGS
Virginia Gear & Machine Corp. • Lynchburg, Va.

New Machinery
and Equipment

For Further Information Use Card on Pages 187-188

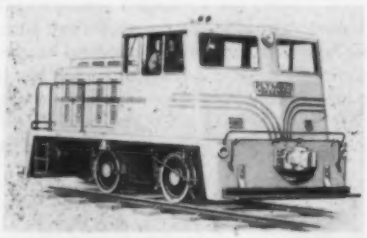
• Model 40 Superior engine generator set produced by the White Diesel Engine Division of The White Motor Company was developed to power aggregates crushing machines, asphalt plants, and large excavators in rugged, heavy-duty construction work. Weighing 35,000 lb., this 565-kilowatt, 800-hp. package is one of the largest units in the company's line of portable power packages. It was exhibited at the recent A.R.B.A. Road Show in Chicago. **(51)**



• Transistorized highway flashers, displayed at the A.R.B.A. Road Show by the R. E. Dietz Company, are being produced in four models. The barricade-mounted type can be equipped with either a two-faced head (as illustrated) or a 360 deg. head. The model shown at the right with a 360 deg. head fits down inside a traffic cone, and can also be equipped with a two-faced head. **(52)**

• The LeTourneau-Westinghouse Company entered the truck field with the introduction at the 1957 Road Show of its LW-30, a 30-ton off-the-road hauler. The LW-30 has no springs, no grease fittings, no conventional axles; it features air suspension, a short wheelbase, and a unique final drive design. Extremely maneuverable, it turns completely around in a 43-ft. diameter circle. **(53)**

• Spray Starting Fluid for diesel and gasoline engines sprays effectively in temperatures ranging from –65 deg. F. to 180 deg. F., according to the manufacturer, the Spray Products Corporation. Spray Starting Fluid is safe and odorless in storage. **(54)**



• A new line of medium-duty switching locomotives incorporating the "cab-in-front" design has been introduced by the Plymouth Locomotive Works. This design is offered in the 25- to 40-ton weight range, with either four- or six-wheel drive. Called the Plymouth Torqomotive, the switcher uses a hydraulic torque converter coupled to a Plymouth transmission to transmit power from the engine to the wheels. **(55)**

• Oliver Super 88 industrial wheel tractors develop 49.81 maximum horsepower on the drawbar. Extra-high compression ratios, six working speeds, heavy-duty front axle, rugged frame, and reinforced rear axle are some of the features of the Super 88's. Big double-disc brakes provide sure stopping. Recirculating ball steering provides maneuverability. Oliver's adjustable rubber suspension seat cuts down on operator fatigue. **(56)**

B.F.Goodrich

All-Nylon Super Traction tires work 5,000 hours, can still be retreaded

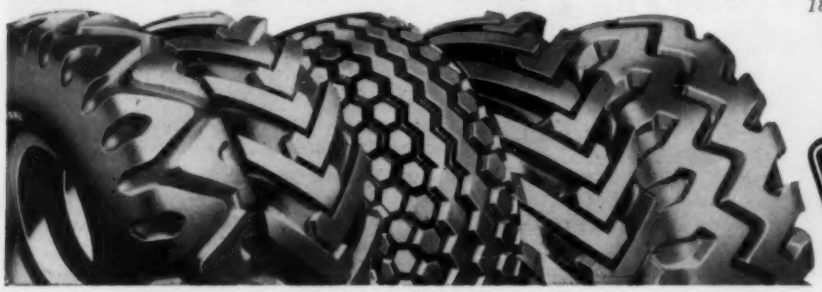
NORTHERN IMPROVEMENT CO. operates 95 vehicles in heavy highway construction work in North and South Dakota, Minnesota and Montana. The scraper above, when loaded, weighs 35 tons, works 60 to 72 hours a week on dirt and gravel roads or no roads at all.

Even under these rugged conditions, B.F.Goodrich *all-nylon* Super Traction tires give 5,000 hours' service before retreading, then give an additional 70% of new-tread service on one retread! One reason for such an exceptional record is the B.F.Goodrich *all-nylon* cord body. Nylon is stronger than ordinary cord materials, withstands double the impact and resists heat blowouts and flex breaks. The *all-nylon* Super Traction body outwears even the extra-thick tread, *can still be retreaded—often over and over.*

B.F.Goodrich builds the Super Traction tread with thick, widely spaced cleats that take a big bite into the soil, give you positive traction. Yet the extra-wide tread gives greater flotation in soft going. Work goes faster—you save money.

Your B.F.Goodrich dealer has a complete line of tires (left) for all types of off-the-road work. And he offers expert, on-the-job tire service. See him today or write: *B.F.Goodrich Tire Co., A Division of The B.F.Goodrich Co., Akron 18, Ohio.*

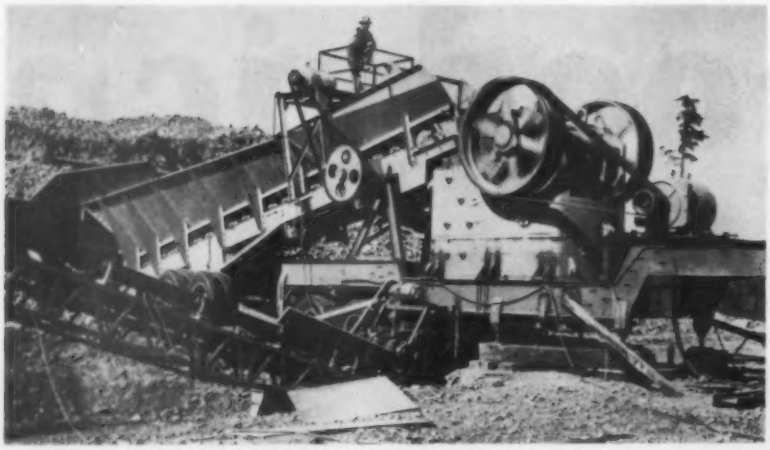
There's a B.F. Goodrich tire for every construction job



Specify B.F.Goodrich tires when ordering new equipment

B.F.Goodrich
FIRST IN RUBBER

Your B.F.Goodrich dealer is listed under Tires in the Yellow Pages of your phone book



• This Telsmith 42- by 48-in. roller bearing jaw crusher, designed for large capacity aggregate production, was among the new equipment introduced by Smith Engineering Works at the A.R.B.A. Road Show. The crusher is shown here as a portable unit. (57)

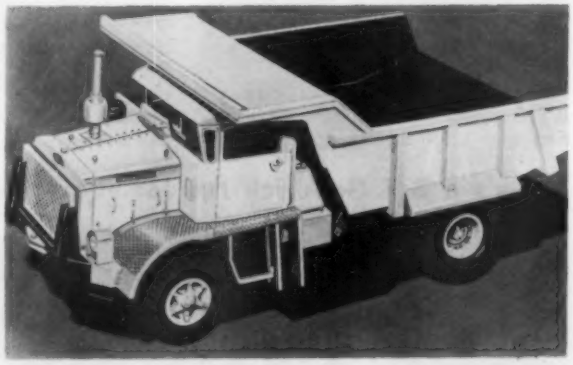
• Model D Tournatractor, a medium-size, rubber-tired tractor, was introduced by the LeTourneau-Westinghouse Company at the A.R.B.A. Road Show. Its 4-cylinder, 143-hp. diesel and 5-speed earthmover-type transmission provide speeds ranging from 2.2 m.p.h. for tough dozing to 19.3 m.p.h. for job-to-job travel. The planetary steering system permits turns while maintaining full power on all four drive wheels. To speed maintenance, access plates are provided in all assemblies. Most components can be removed from the "D" without disassembly of other elements. (58)

• "No. 860" chain, a new pintle-type chain which can handle buckets up to 30 in. in width, has been developed by the Kensington Steel Company. An 18-in. span between outer holes in the K-4 attachment line gives the single strand the strength and rigidity it needs to handle wide buckets. The chain is built of Kenkrome, an alloyed manganese steel developed by Kensington to resist wear and abrasion. (59)

• A pneumatic drive mechanism generates the driving force in a new type of vibrating feeder introduced by the Cleveland Vibrator Company. According to the manufacturer, this method of operation permits the feeding of some materials at an uphill slant of 20 deg. Available in pan, trough, or tubular construction, the feeders handle a wide variety of

bulk material, including sand, gravel, and cement. Rates of feed are easily changed and adjusted. The frequency of vibration is selected by varying the operating air pressure over a range of 30 to 90 p.s.i., providing control of feed rates. The drive mechanism has one moving part, and is designed to seal out dirt and other foreign matter. (60)

• Bergstrom Castaloy shaped tooth repointers, made by Industrial Overlay Metals Inc., are said to reduce breakage of rebuilt teeth, eliminate waste in ordering, and lower shipping time and costs. The BC-G self-sharpening type (illustrated) has a groove across the point ½ in. wide on the 4 in. size, ⅞ in. wide on the larger sizes, extending along the sides 1¼ in. on the 4 in., 2 in. on the larger sizes. Depths range from ⅛ in. on small sizes to 3/16 in. on the larger sizes. Filling this groove with hard metal finishes the point to standard dimensions. (61)

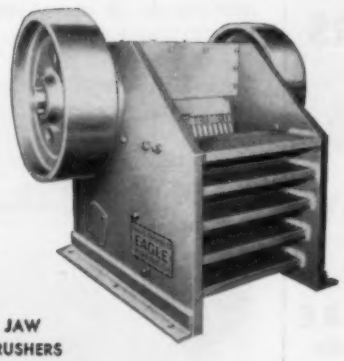


• The AP-25 off-the-highway rear dump truck previewed at the A.R.B.A. Road Show by the Autocar Division of the White Motor Company is rated at 25-ton payload. Features of the Autocar AP-25 include planetary gear drive rear axle; a steering wheel which can be adjusted to fit any size driver; an all-welded box section frame reinforced internally with corrugated steel plate; an offset-mounted cab; and a dual outboard mounted double-acting telescopic hoist which gives a full 70-deg. dumping angle. The new rear dump is available with a 335- or 375-hp. Cummins Turbo-Diesel engine. (62)

PRODUCE MORE STONE AND GRAVEL WITH MOBILE

Eagle Crushers

Portable Eagle crushing plant operated by Harry Miller Contracting Co., Suffield, Ohio, delivers pit run sand and gravel at rate of 100-125 yds. per hour for cushioning concrete super-highway nearby. Whole layout can be moved as gravel is consumed. (Power source is electric generator set—could be gasoline or diesel direct drive.)



JAW CRUSHERS

HAMMER-MILLS

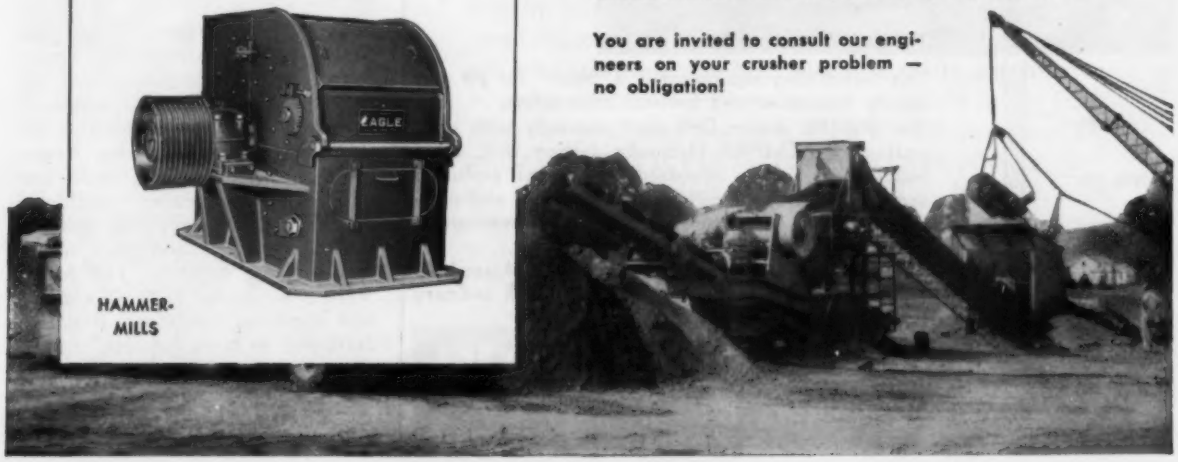
Eagle Crushers—both jaw type and hammermill—bear the characteristic marks of the experienced manufacturer—simple design, durable construction, ease of servicing. Eagle originated the one-piece, electrically welded frame—has pioneered in the field of portable, compact, crusher plants like the one above.

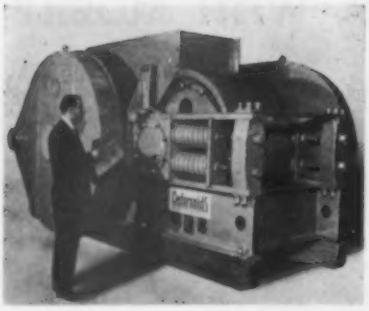
There is a range of sizes in the jaw crusher—and a variety of styles (skid-mounted, trailer, portable, roadside). Likewise, the hammermill or impact breaker is made in several sizes and for various applications—is particularly well suited to limestone reduction.

EAGLE CRUSHER CO., Inc. GALION OHIO·U·S·A

JAW CRUSHERS · IMPACT BREAKERS
PULVERIZERS · CONVEYORS · LOADERS

You are invited to consult our engineers on your crusher problem — no obligation!



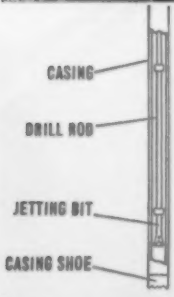


• Capacities up to 520 t.p.h. are possible with this 55- by 30-in. roller bearing roll crusher, introduced at the A.R.B.A. Road Show in January by the Iowa Manufacturing Company. The large diameter of the rolls makes possible the handling of exceptionally large feed. Maximum finished size is 5 in. and minimum is ¼ in. The Model 5530 can be equipped with two smooth roll shells, two corrugated shells, or one of each. Safety shear plates protect the crusher against tramp iron or uncrushable material. The opening between the rolls can be adjusted quickly and easily by inserting or removing shims in a slot on top of the frame. **(63)**

What's down there?

Empire
TEST DRILLS
come up with the
RIGHT ANSWERS

EMPIRE
Hydraulic
Testing
Drill

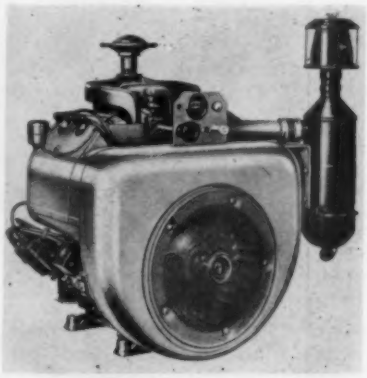


This test-drilling equipment is a "must" for pit and quarry operators and general contractors.
The EMPIRE Junior Drill used manually with solid rods or the EMPIRE Hydraulic Jetting Drill, using hollow rods, is the standard method of exploring sand and gravel deposits for composition and presence of clay, and accurately determines overburden depth and formation.
Easily transported in any kind of terrain. Assembled and ready for work in minimum time with ordinary labor.

Write TODAY for complete details

NEW YORK ENGINEERING CO. 75 WEST STREET NEW YORK 6, N. Y.

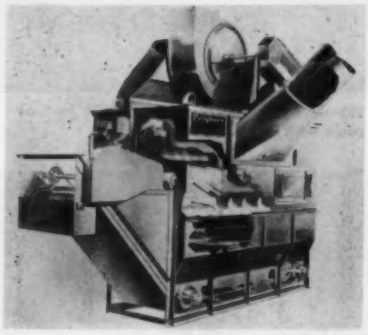
• A new side-dumping bucket attachment for Traxcavators was introduced at the 1957 Road Show by the Caterpillar Tractor Company. The Caterpillar No. 955 Traxcavator is the first model in the company's line to be supplied with the attachment. With the 1½-cu. yd. side-dumping bucket the Traxcavator can perform in-line loading, which cuts down on loading time and lowers maintenance costs. The dumping end of the bucket has been extended approximately 18 in. to increase side-casting distance. **(64)**



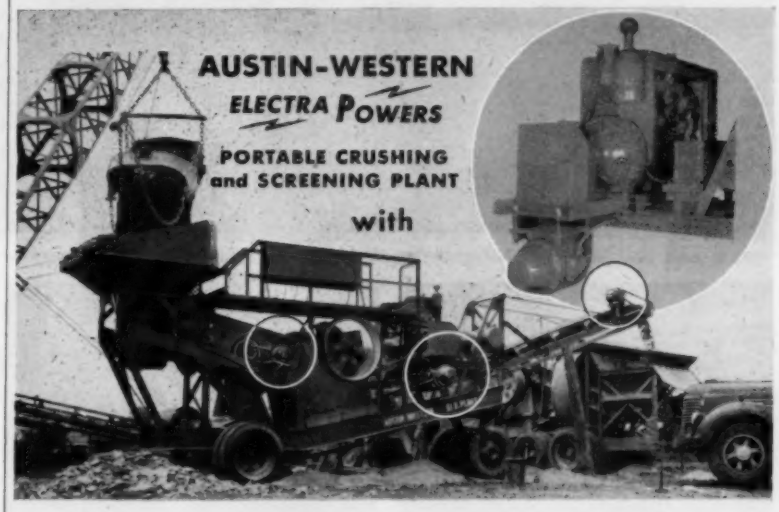
• Model VH4, a new 30 hp. Wisconsin V-type, four-cylinder, heavy-duty, air-cooled engine, offers full horsepower at all speeds within its operating range. Illustrated is the open engine with rotating screen, electric starter and generator, and visual-type air cleaner. Additional features include heavy-duty construction and design, and high torque load-carrying capacity. The Model VH4 is air-cooled to fit all climates and operating conditions. Regularly furnished to burn gasoline, the engine can also be equipped to burn most other fuels, including natural gas, propane, butane, and kerosene. **(65)**

• P&H Model 575-TC, a 45-ton truck crane designed by Harnischfeger for over-the-highway use, features a twin front axle arrangement with hydraulic steering boosters. When requirements are too stringent for highway travel in standard trim, the simple removal of counterweight, outriggers, and floats will reduce the gross weight from 96,000 lb. to 70,000 lb. Twelve oversize 14 x 20 tires provide good traction on rough terrain. Power plants for both the crane and the carrier are P&H Model 4870 diesels, developing 180 hp. at 1,800 r.p.m. Drive is to both rear axles with inter-axle differential through a five-speed main transmission and three-speed auxiliary transmission. The truck crane was introduced at the 1957 Road Show. **(66)**

• Model 125 HiLoader, manufactured by the Athey Products Corporation, has a capacity of 10 cu. yd. per minute in free-flowing material. Travel speeds up to 20 m.p.h. and loading speeds to 2.01 m.p.h. are possible. The 125 HiLoader has a self-contained convertible moldboard arrangement for stockpile loading or heavy-duty windrow loading, a full-floating feeder, and is available with a 13-ft. or 18-ft. swiveling side-discharge belt conveyor which is controlled from the driver's seat. **(68)**



• Pangborn's Type CV-VentriJet for wet dust collection utilizes the principle of the venturi tube. The dust-laden air is mixed with water particles and the mixture is directed against impingement plates which trap the water and dust from the air. The VentriJet is a complete, self-contained unit which is easily installed, and requires no outside auxiliary equipment for its operation. **(67)**

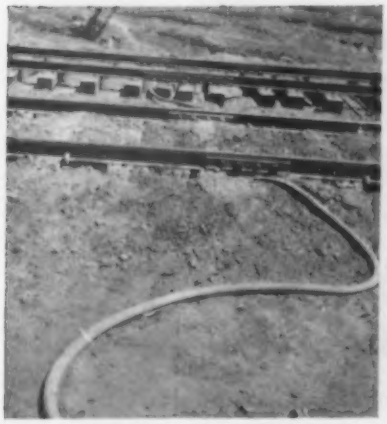


WIN POWER **GENERATORS**

Baldwin-Lima-Hamilton Corp.,—Construction Equipment Division—Lima, Ohio, manufacturers of AUSTIN-WESTERN crushing and screening equipment shown here, use WINPOWER generators for electric power. They know that by using WINPOWER powered electric motors and speed reducer drives on conveyors, feeders and screens they can eliminate long drive belts and drive shafts, expensive to buy and difficult to replace in case of failure in the field. *Whatever* your need there is a WINPOWER Generator for you. Generators as well as gasoline or diesel powered electric plants in capacities from 400 watts to 100 KW. You can save time and money with WINPOWER. See your WINPOWER Distributor or phone, write or wire at once for complete illustrated folder and specifications.

WINPOWER MFG. CO.
NEWTON, IOWA • U.S.A.

Over-all view of mine. Each ore car in foreground contains about 60 tons of ore.



Tracks are constantly being moved as pit enlarges. Cables are moved with the tracks.

Cables lie in the sun or rain without any protection. They don't need any.

Shovel, being moved, carries 5000 feet of cable with it in the steel box.

Workman manhandles the cable trailing a churn drill as it heads for new location.

Notice long span of this cable bridge and extreme flexibility of cable in foreground.

Shovels lift up to 18 tons in one bite; they operate 24 hours a day.

Entrance poles and meter houses. Cables start from here, work at 440 or 4000 volts.

Iron ore mine finds Tiger Brand Amerclad *in use since 1928*

THE PICTURES show one of the greatest open pit iron ore mines in the world. From pole-head to meter house to shovels and drills, Tiger Brand Amerclad electrical cable serves as a flexible nerve system to supply the huge electrical requirements of machines that operate 24 hours a day in temperatures that range from 100° in the shade to minus 40° in the shoulder-deep snow.

Some of this cable has been in use since 1928, and it's still good.

Other cable is right in the blast area, where it is dragged over sharp rocks and pounded by dynamite-propelled boulders. Even this cable averages six to eight years of useful life.

Look at the pictures and read the captions that tell about operating conditions. You'll see why *no* heavy-duty electrical cable has a greater reputation than Tiger Brand Amerclad. Call your American Steel & Wire representative for the whole story.

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS · TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS TIGER BRAND ELECTRICAL WIRE & CABLE

A STANDARD TIGER BRAND CABLE FOR EVERY SPECIAL JOB

- asbestos wire and cable
- mold cured portable cord
- shovel & dredge cable
- paper & lead cable
- varnished cambric cable
- interlocked armor cable
- special purpose wire & cable
- aerial, underground and submarine cable

UNITED STATES STEEL

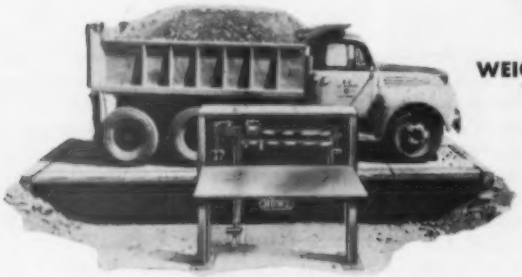
Handling

ASPHALT CEMENT AGGREGATES?

for the right weigh . . . see HOWE

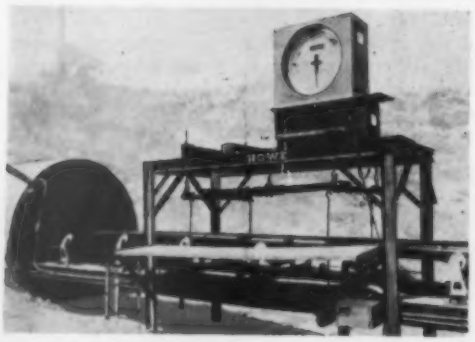
AUTOMATIC BATCHING

is simple with the Howe Batchmaster. Adjust the ingredient setup panels to the desired formula, touch a button, and the mix is automatically proportioned, including aggregates and cement or asphalt. Accessories such as automatic recording—mixer time controls—moisture compensation and many more are available. Systems tailored to your operations.



WEIGH ANYTHING ON WHEELS, ANYWHERE!

Take Howe Portable Vehicle Scales to the site, set up on timber or concrete footings—no pit needed. Capacities 20 to 70 tons—lengths 20 to 60 feet.



WEIGH MATERIAL IN MOTION

to high accuracy, with Howe Conveyco Conveyor Scales on existing conveyors or as self-contained units. Control conveyor speed or feeder rate for steady discharge—automatically.

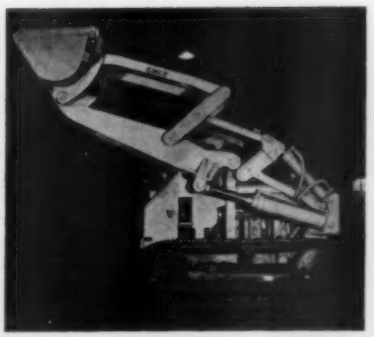
From the simplest weighing requirements to automatic control of materials by electronics, you'll find the *right* weigh is the HOWE way—developed out of a century of experience with industrial scales. For immediate service from any of 23 branches with fully equipped service departments, consult the yellow pages of your telephone directory.

For the right weigh . . . see HOWE

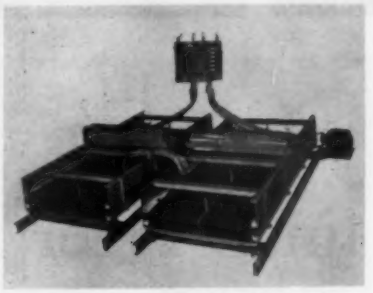
The HOWE SCALE Co

A Subsidiary of Safety Industries, Inc., Rutland, Vt.

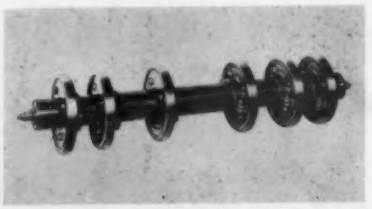
Scales • Trucks • Weightographs • Weight Recorders



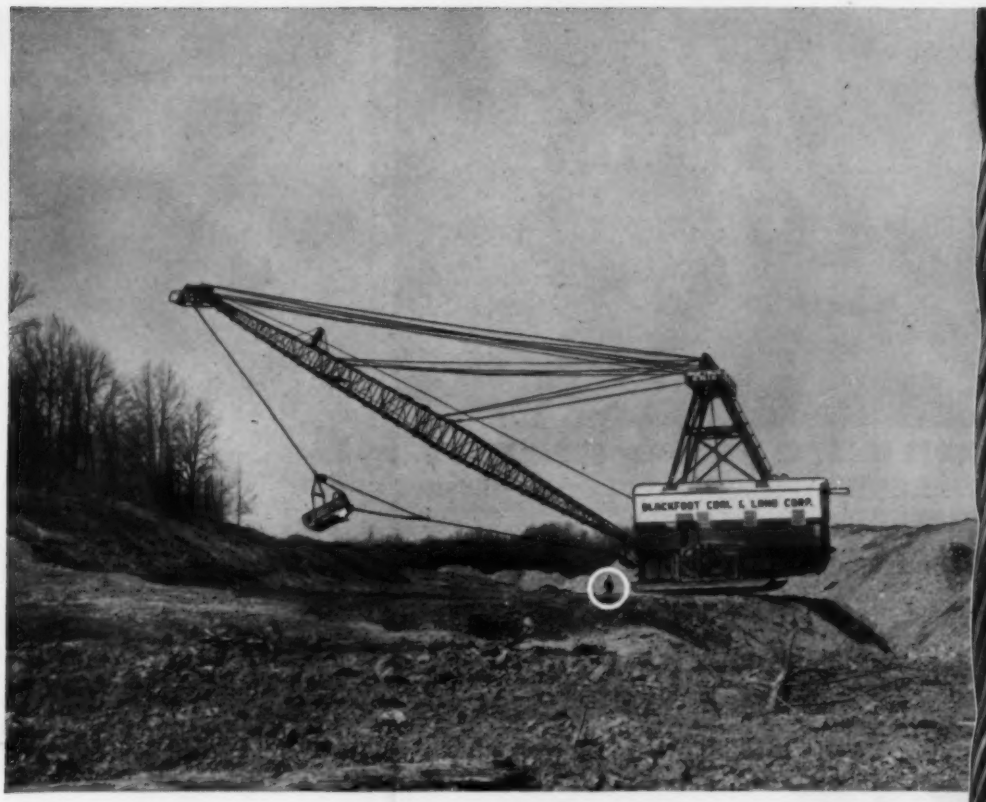
• A new front-end loader attachment has been designed by the Eimco Corporation for its heavy-duty Model 105 tractor. To fill the 2½-cu. yd. bucket, the loader develops 25,000-lb. digging force at the lip. Large, double-acting hydraulic boom cylinders provide power to hoist loads weighing up to 15,000 lb. to full height of 14 ft. **(69)**



• The Universal Vibrating Screen Company is now offering a new Unilec dual-screen heating system. The new hook-up provides high heating efficiency through short secondary leads and eliminates the need for insulating materials. Built-in veil-plates prevent drafts up through the screen mesh while at the same time carrying throughs to the discharge end of the vibrating screen. **(70)**



• In addition to supporting the return run of the belt, Barber-Greene self-cleaning return rollers are said to eliminate uneven and excessive belt wear resulting from material build-up causing the belt to rove. **(71)**



50% Longer Life from VHS Dragline
. . . at Blackfoot Coal and Land

• Mr. Henry Fitch, Superintendent of Blackfoot Coal and Land Corporation, Oakland City, Ind., says: "The two ropes on our Bucyrus-Erie 500W Dragline normally lasted only from 1½ to 2 months—even though we used the best Improved Plow Steel lines we could get. We were pleasantly surprised when our first VHS line lasted over 3 months—an increase in service life of well over 50%. Naturally, we are using VHS from now on out."

New Grade of Steel

VHS is setting service records like this on draglines, shovel hoist ropes, and scraper cables all over the country. Made from a new grade of steel for wire rope, it is at least 15% stronger than IPS—the strongest grade formerly available. This means you can handle heavier loads with the same diameter line. And you get a higher factor of safety.

Cuts "Down Time"—Saves Money

New VHS is not only stronger, it is tougher, too. It resists abrasion . . . keeps its shape under pressure . . . can't become "hide-bound" or lose its flexibility. It lasts longer in the toughest applications . . . such as draglines, shovel hoist ropes, and scraper cables.

The longer life you get with VHS saves you money. And you make more big savings by cutting "down time" of equipment for wire rope replacement.

At Your Distributor Now

Your distributor has scraper cables, draglines, and shovel hoist ropes of new LAY-SET VHS in stock now. Just call him and tell him the size and diameter you want. You don't need any complicated specifications.

For more information see your Hazard distributor salesman or write to the nearest Hazard office for Bulletin DH-513H

HAZARD WIRE ROPE DIVISION
American Chain & Cable Company, Inc.
Wilkes-Barre, Pa., Atlanta, Chicago, Denver, Houston, Los Angeles, New York, Odessa, Tex., Philadelphia, Pittsburgh, Portland, Ore., San Francisco, Bridgeport, Conn.

LAY-SET VHS

15% Stronger • Tougher • More Wear-Resistant

40% MORE HOLES PER DAY
with this WISCONSIN-powered boring machine

Thanks to quality-engineered products like this Wisconsin-powered rock boring machine, pit operators get 40% more holes per day, according to the manufacturer. This powerful machine is capable of drilling with 4 to 12-inch augers to a horizontal depth of 150 feet in earth or rock formations!

A Wisconsin engine was selected for this gruelling assignment . . . further proof that quarrying and mining equipment manufacturers find, in compact Wisconsin engines, the right combination of heavy-duty construction and basic high torque design for most hp. hours with minimum maintenance. And, pit operators can forget about radiator problems! Here's efficient AIR-COOLING at all temperatures from sub-zero to 140° F. All models can be equipped with electric starter and generator, or starter only, as original equipment.

Write for "Spec" bulletins S-195 and S-207 with full information on all models from 3 to 56 hp.

MOST H.P.HOURS

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

A 7-6080-⅓

• A new line of tractor-mounted front-end loaders has been announced by the Superior Equipment Division. The loaders feature a new, extra-strong, tubular frame. Part of the frame acts as a hydraulic oil reservoir. Bucket rams are mounted so that they cannot spring, and hydraulic piping is enclosed in the loader arms for protection. The loaders have a strong pry-out action for heavy loads, and can be mounted on most models of low silhouette four-wheel industrial tractors. **(72)**

• Stearns magnetic pulleys, operating as head pulleys in belt conveyors, remove tramp iron and ferrous contamination from a large variety of bulk materials. When the mixed material comes within the magnetic field (broken lines in the illustration), the magnetic material is attracted toward the face of the pulley. It is then carried underneath and past the influence of the magnet where it is discharged. The non-magnetic material passes over the pulley in a normal trajectory, providing automatic and continuous separation. Stearns electro-magnetic pulleys are designed with varying styles of magnetic fields to be best suited to the particular magnetic separation requirements. **(73)**

"Our Universal 293Q-Sr. portable crusher

Saves us $2400 a day in trucking costs alone'

says Mr. Ken Smith, Vice President, Princeville Stone Company, Princeville, Illinois

"We invested in the Universal 293Q-Sr. because it was the only single unit portable plant that could give us 'big stationary plant' crushing capacity. Its outstanding production record has meant more truck loads of finished material. This, combined with the plant's portability, accounts for the savings of $2400 per day in trucking costs alone. In addition, we have stepped up our jobs 25%.

"The production speed of our Universal 293Q-Sr. astounds most of the contractors in this area. They call the crusher 'hot'. It's no wonder, when you consider the size of the basic units in this plant — a 20" x 36" jaw crusher, a 30" TwinDual roll crusher and a 4' x 12' (2-5/6 deck) screen. The jaw and TwinDual rolls combine to give us three stages of rock reduction. Actually, the plant produces capacities expected of stationary plants — yet skid mounting of apron feeder and jaw crusher makes moving fast, easy and within highway weight limitations.

"Also, the Universal 293Q-Sr. is versatile. We can quickly make screening and crushing adjustments on the spot to meet state specifications. Yes, our 293Q-Sr. represents a gilt-edged investment to us", states Mr. Walter Smith, President, Princeville Stone Company, "It will bring us dividends over the next 15 years."

As shown above, the 293Q-Sr. can be easily converted to a 293QS TwinDual Gravel King by replacing the apron feeder with a scalping screen and swivel feed conveyor.

These are but a few of the important reasons why you should consider a Universal 293Q-Sr. portable crusher . . . your opportunity for additional profits on new highway program jobs. The 293Q TwinDual Pacemaker is made in three sizes (293Q-Jr., 293Q-Sr., 293Q-Super Sr.) to meet various production requirements. Write for complete information today!

PETTIBONE UNIVERSAL
In Cedar Rapids Since 1906

UNIVERSAL ENGINEERING CORPORATION

619 C Avenue, N.W., Cedar Rapids, Iowa

Subsidiary of Pettibone Mulliken Corporation, 4700 W. Division Street, Chicago 51, Illinois

• Built around the Case 310 utility tractor, this new combination loader-backhoe, introduced at the Road Show by the J. I. Case Company, is designed for heavy-duty applications. A wrap-around mounting frame is a feature of the loader. The backhoe, with a full 180 deg. swing of the boom, has an 18 ft. 2 in. reach and a digging depth of 12½ ft. The loader has a dumping height of 10 ft. 5 in. at start, 14 ft. 10 in. at end, and dumping reach for the ½ cu. yd. bucket is 11 ft. 1 in. A 90-deg. bucket roll-back insures heaping loads without spillage. Boom swing is foot pedal activated. **(74)**

• Available Truck Company's new front tandem suspension features spring-mounted equalizer beams with upper torque rods extending towards center of front bogie between dual front axles and paralleling drag links which eliminate the possibility of free steering. Suspension provides the maximum oscillation and right and left turning angles. Ease of steering is provided by hydraulic boosters. Capacities ranging from 25 to 50 tons will be available. **(75)**

BERGSTROM CASTALOY

tailored-to-fit

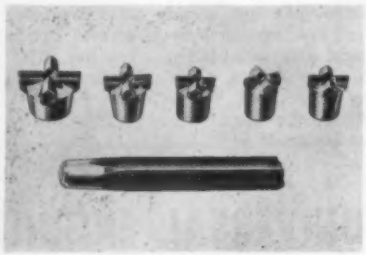
Manganese Tooth Repointers

- *Save 50% time rebuilding worn bucket teeth*
- *Crescent-shaped welds reduce breakage of rebuilt teeth*
- *Grooved point for hard metal provides strength without increasing thickness*
- *Groove filled with Bergstrom hard metal will increase service life up to 3 times*
- *Self sharpening*
- *Smaller formed "V" reduces amount of required weld metal*
- *Repointers can be shipped Parcel Post to save time and money—Order quantity needed*

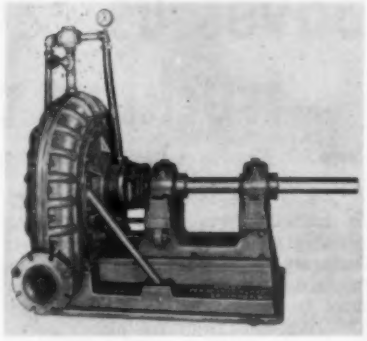
Write for "How-to-Do-It" instruction sheet

INDUSTRIAL OVERLAY METALS, Inc. EATON, OHIO

• Production of a new single front-mounted telescopic hoist, said to raise to full dump position in less than six seconds, has been announced by the Hercules Steel Products Company. Known as the Model 1215, the new 5-in. telescopic hoist features a new Hercules-designed bleeder valve which provides hydraulic cushioning at the end of the lifting stroke to prevent cylinder damaging. Accelerating the truck engine at the top of the stroke provides a rapid 4 to 10 in. rising and falling motion of the body, assuring rapid and complete dumping. **(76)**



• The Cleveland Rock Drill Division of the Le Roi Company has improved the design of its CRD detachable drill bits. An offset gauge of ⅛ in. at a point ⅜ in. to ½ in. back from the cutting face reduces the area of the reaming face exposed to rubbing action against the rock. The stronger corner formed by the offset gauge and steep reamer permits thinner wings and a smaller area of reaming face. Steeper reaming angle permits CRD bits to be used with light Air Leg type drills. **(77)**



• Type D-T heavy-duty "Telltale" centrifugal sand and gravel pump, manufactured by the Pekor Iron Works, Inc., features a cast iron flange, bolted to the impeller and screwed onto the shaft, which shifts the strain from the impeller center to the 13-in. diameter of the flange; larger shafts for decreased vibration and increased load capacity; special-duty bearings for greater radial and thrust loads; a strong, non-flexible bearing stand grooved to base for perfect alignment; and a shell tied to the base by steel braces to resist sudden shock loads. **(78)**

Here's real help

for road-building contractors!

Reduce delays—cut costs!

Construction in progress on 10 miles of the new Massachusetts Toll Highway—in Palmer-Chicopee and North Wilbraham, Mass. The Palmer section requires excavation of 2 million yards of earth and 650 thousand yards of rock. Grandview Construction Corp. of Mt. Vernon, N.Y., contractors for this section, used Gulf petroleum products exclusively on the job.

how GULF keeps equipment rolling

On the Ohio Turnpike, Gulf was the supplier on 18 of the 45 contracts representing nearly $81 million out of the total cost of $193 million. Photo shows section under construction between Strongsville and Olmsted Falls, Ohio, where more than a million cubic yards of dirt had to be moved. Typical of Gulf service was delivery of 68,000 gallons of diesel fuel in a 20-day period to one 5000-gallon underground storage tank for Peter Kiewit Sons' Company and Condon-Cunningham Company.

Shown under construction here is the only tunnel on the West Virginia Turnpike—a 2-lane tunnel, 2665 feet long with a finished diameter of 36 feet. Work on this part of the job required 25,000 cubic yards of open cut excavation, 91,800 cubic yards of tunnel excavation, and 20,800 cubic yards of concrete tunnel lining. Bates & Rogers Construction Corporation of Chicago, Illinois, used Gulf petroleum products exclusively.

on major highway projects

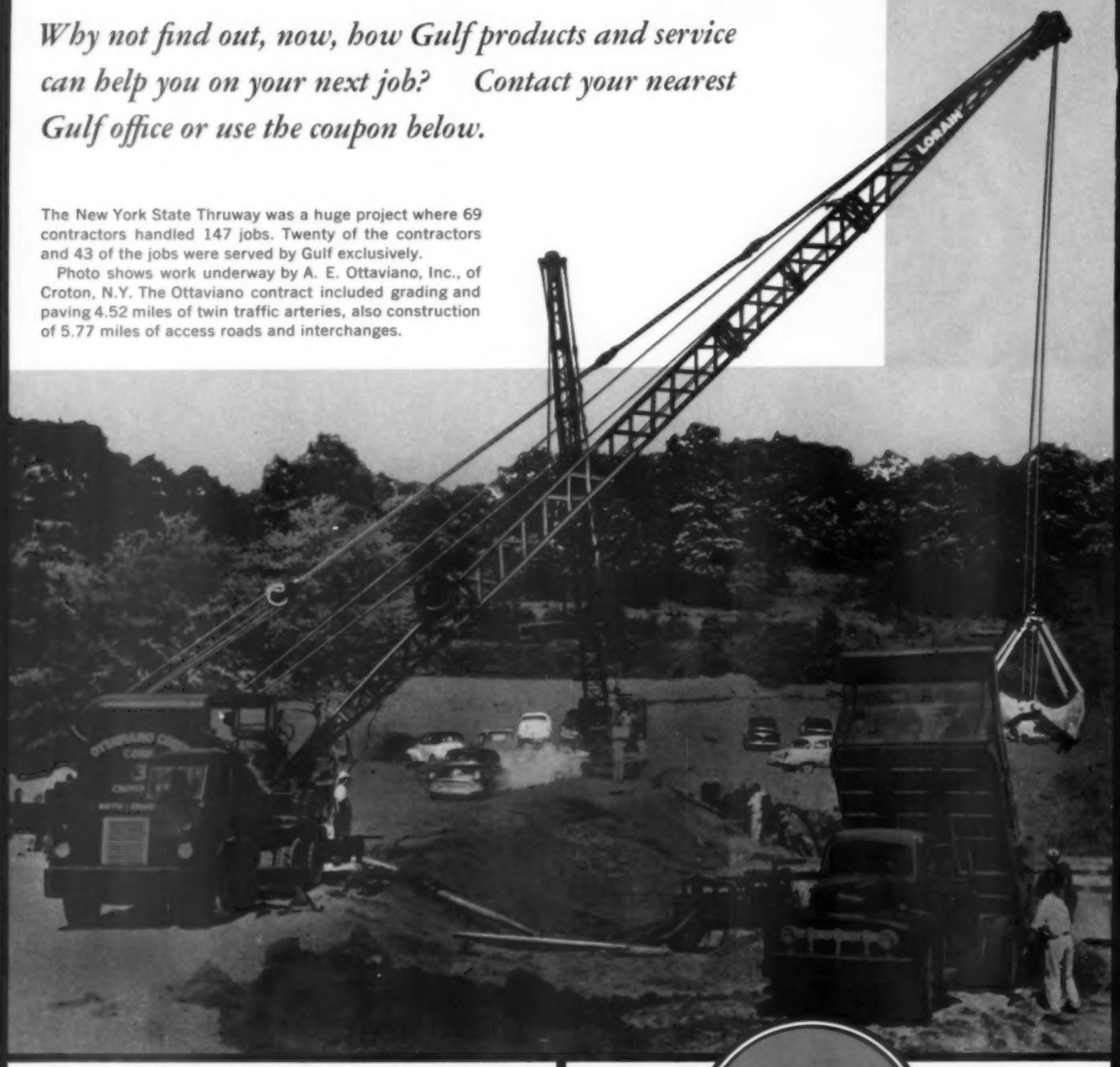
It's not just coincidence that from Maine to New Mexico . . . from the Atlantic Ocean to the Rockies . . . more and more contractors are relying on Gulf petroleum products. That's because:

- Dealing with Gulf, you're sure of prompt delivery. When your equipment arrives at the job, Gulf will be waiting, ready to deliver fuels and lubricants. As long as the job lasts, Gulf will supply you from a nearby bulk plant. Gulf has 1500 strategically located warehouses, so you're sure of an uninterrupted supply of petroleum products—on time!
- Gulf Petro-engineering Service is provided to you on the job . . . to make sure that you're using the most economical and efficient petroleum products for every unit of your equipment. Thirteen hundred Gulf scientists and engineers stand behind your Gulf Sales Engineer to provide technical advice whenever you need it.
- Gulf fuels insure top engine performance. They burn clean and deliver full power.
- Gulf lubricants provide an extra margin of protection to every moving part. With these quality lubricants you'll have fewer mechanical delays, lower maintenance costs and a smoother-running job.

Why not find out, now, how Gulf products and service can help you on your next job? Contact your nearest Gulf office or use the coupon below.

The New York State Thruway was a huge project where 69 contractors handled 147 jobs. Twenty of the contractors and 43 of the jobs were served by Gulf exclusively.

Photo shows work underway by A. E. Ottaviano, Inc., of Croton, N.Y. The Ottaviano contract included grading and paving 4.52 miles of twin traffic arteries, also construction of 5.77 miles of access roads and interchanges.



Gulf Oil Corporation
1822 Gulf Building, Pittsburgh 30, Penna.

Without any obligation on my part:

- ☐ Send me a copy of "Gulf and Your Business."
- ☐ Send me a copy of "Contractors Guide" (Lubrication and Maintenance Information).
- ☐ Have a Gulf Sales Engineer call on me.

Name_____

Company_____

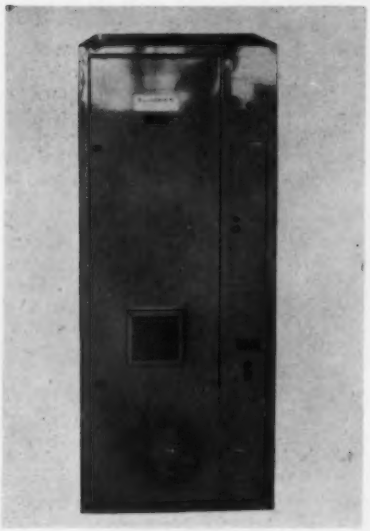
Street Address_____

City_____ Zone_____ State_____

GULF

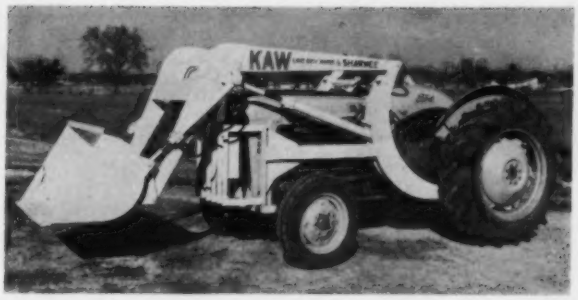
GULF OIL CORPORATION
1822 Gulf Building
Pittsburgh, Pa.

SP-8944



• This unit houses the electrical control assembly and rectifier components for the Research-Cottrell CA system for electrostatic precipitators. These units contain no moving parts other than the relays that put them in and out of operation, and can be installed on or near precipitators. A single switch puts into operation the electrical control assembly that brings automation to the precipitator power supply. The control assembly then continuously and instantaneously monitors and adjusts spark rate to maintain maximum voltage and power input. The need for constant manual supervision is eliminated and precipitators are maintained at an efficient level of operation at all times. **(79)**

• Model S-12, a new 13 cu. yd. bottom dump featuring an overhung engine tractor of 218 hp. and a top speed loaded at 28.2 mp.h., was introduced by the Euclid Division, General Motors Corporation, at the Road Show. Rated at 40,000-lb. payload, the S-12 carries up to 19 cu. yd. heaped and makes a non-stop 180-deg. turn in 31 ft. 2 in. Loading height is 9 ft. 5½ in. The new unit consists of a standard Euclid 13 cu. yd. hopper with a new hitch designed to couple it with Euclid's S-12 overhung engine tractor, making it interchangeable with the S-12 scraper. It has a 5-speed transmission and full 90-deg. hydraulic steering. **(80)**



• A new design of Kaw Loader has been announced by the Shawnee Manufacturing Company, Inc. It is a light-duty unit, designed for mounting on the smaller models of Ford tractors. It is equipped with a bucket of 10-cu. ft. capacity and will lift a 1,250-lb. load to the full 9-ft. dumping height in 5 seconds. The loader has double-acting bucket cylinders and an 11-gal. crankshaft pump. **(81)**

ARE YOUR STONE AND GRAVEL PRODUCTS CUBICAL IN SHAPE?

ARE THEY FREE OF SOFT STONE AND CLAY?

WILL THEY MEET SPECIFICATIONS AND PASS ABRASION TESTS?

DO YOU NEED MORE OF THE FINER SIZES IN YOUR SAND PRODUCTS?

CAN YOU MEET TODAY'S SPECIFICATIONS ON AG LIME?

STEDMAN CRUSHING EQUIPMENT

SOLVES MOST OF THESE PROBLEMS!

Write for complete details on the STEDMAN PRINCIPLE OF IMPACT CRUSHING to meet today's requirements.

MORE THAN A CENTURY OF KNOW-HOW

STEDMAN FOUNDRY AND MACHINE COMPANY, INC.

Subsidiary of United Engineering and Foundry Company

AURORA, INDIANA Founded 1834

P & Q product briefs

(use reply card on page 187 for more information)

SRL RUBBER-LINED SAND PUMPS are available from the *Denver Equipment Company* in two types—the open runner pump and the closed runner pump. Capacities up to 2,400 g.p.m. are handled by the wide range of sizes offered. All wearing parts in contact with pulp are made of a pressure molded rubber compound. **Circle No. 82**

LIGHTWEIGHT, FLEXIBLE PLASTIC GOGGLES have been designed by the *Chicago Eye Shield Company* to provide comfortable protection to workmen. The new Cesco goggles are molded from soft vinyl material. Wide window lenses are curved to allow full vision. Small perforations, angled away from the eyes, provide ventilation. **Circle No. 83**

rely on the line of strongest design... Hercules

RB Series rock body

BUILT RUGGED FOR ROCK!

Made to order for rock work . . . that's Hercules' RB Series rock body line. With 1/4, 5/16 or 3/8 in. steel plate shells, electro-welded box-reinforced side construction, hardwood-cushioned wear plates and heavily reinforced top rolls, these bodies take the impact shocks of power shovel, chute and conveyor loading in stride! And, carefully engineered scow end and body side slope assure firm packing of loads in transit plus fast, clean dumping.

AA-5085

Ask your Hercules distributor to show you how RB Series 15 to 25 cu. yd. rock bodies can cut your operating costs.

HERCULES STEEL PRODUCTS COMPANY
Galion, Ohio

SPHER-ALIGN is the trade name of a new line of spherical roller bearing pillow blocks designed by the *Dodge Manufacturing Corporation*. Micro-Mount, a new mounting feature incorporated in the design, makes it possible to seat Spher-Align bearings solidly on shafts quickly and easily. **Circle No. 84**

•

THE TESTBORER, a new development of the *Penndrill Manufacturing Division, Pennsylvania Drilling Company*, augers to 150 ft. and core drills to 500 ft. The trailer-mounted drill has a 6 ft. hydraulic feed 4-speed rotary unit, 4-speed hoist, integral 19 ft. derrick, and an automatic driving mechanism. **Circle No. 85**

•

PORTABLE INTERMEDIATE SCALPING PLANTS, designed by the *Iowa Manufacturing Company*, fit between portable primary crushing plants and portable secondary crushing and screening plants to increase capacity and remove unwanted fines and dust. They can also be used for primary crushing in gravel pits where the oversize is not too large. **Circle No. 86**

•

TWO NEW LIGHTWEIGHT VIBRATION ANALYZERS which provide portable instrumentation in measuring, troubleshooting, and balancing out vibrations caused by rotating parts and assemblies in motors, generators, fans, blowers, pumps, compressors, and similar equipment, have been announced by the *International Research & Development Corporation*. The new devices can also be used for quality control. **Circle No. 87**

•

A NEW SELF-PRIMING, SELF-LUBRICATING CENTRIFUGAL PUMP has been developed by the *Worthington Corporation*. Available in three ratings—½, ¾, and 1 hp.—with a choice of 1- or 1½-in. suction and discharge openings, the new monobloc pump features an extra-heavy shaft and has dual discharge openings for flexibility in piping. **Circle No. 88**

•

DUROIL AIR DRILL HOSE, a new hose for pneumatic drills, has been introduced by *Hewitt-Robins, Inc.*, for use in quarries, mines, and other heavy-duty applications. The product will be available in 500 ft. reels, and diameters of ½ in., ¾ in., and 1 in. **Circle No. 89**

•

THE "CHORE-MASTER," a hydraulic reaching, grading, and digging attachment for crane-shovels, was recently introduced by the *"Quick-Way" Truck Shovel Company*. The "Chore-Master," a telescoping boom which mounts on a special gantry, is interchangeable with other standard attachments on "Quick-Way" cranes. All hydraulic actions are controlled by a single lever in the cab. **Circle No. 90**

1000 and 1

WHYTE STRAND

WIRE ROPES

designed to meet every requirement of your equipment

Whatever your equipment needs, there is a Macwhyte Wire Rope to serve you the sure, dependable way. WHYTE STRAND by Macwhyte is produced to meet every job specification under any conditions—PREformed for flexibility, and Internally Lubricated for outstanding service. Macwhyte Wire Rope is available in stock for immediate delivery. Ask for Catalog G-16 and recommendations for the correct Macwhyte Rope for you.

MACWHYTE COMPANY
2906 Fourteenth Avenue, Kenosha, Wisconsin

Manufacturers of Internally Lubricated PREformed Wire Rope, Braided Wire Rope Slings, Aircraft Cables and Assemblies, Monel Metal, Stainless Steel Wire Rope, and Wire Rope Assemblies. Special catalogs available.

MILL DEPOTS: **New York 4,** 35 Water St. • **Pittsburgh 19,** 704 Second Ave. • **Detroit 3,** 75 Oakman Blvd. • **Chicago 6,** 228 S. Desplaines St. • **St. Paul 14,** 2356 Hampden Ave. • **Ft. Worth 1,** P.O. Box 605 • **Portland 9,** 1603 N.W. 14th Ave. • **Seattle 4,** 87 Holgate St. • **San Francisco 7,** 188 King St. • **Los Angeles 21,** 2035 Sacramento. **Distributors conveniently located throughout the United States.**

8110

At Bradford Hills Quarry, Downingtown, Pa., equipment of Lukens "T-1" steel of 321 min. Brinell hardness now handles 1000 tons of limestone daily — so far has lasted more than 18 times as long as metals previously used for the same purpose.

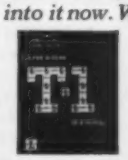
Lukens "T-1" Steel outlasts previous metals 18 to 1

TRADEMARK

Maintenance and replacement costs dropped sharply in chute liners, impact crusher caps, and similar parts when Bradford Hills Quarry switched to Lukens "T-1" steel. These critical parts once wore out in a month. Now they show little or no wear *after 18 months.*

Whether you handle stone, coal, or metal ores, Lukens "T-1" steel in areas hardest hit by punishing impact and abrasion will save you money too. Wear plates, dredge pump liners, storage bins, and fly-ash collectors are just a few typical applications.

Lukens "T-1" steel retains its remarkable combination of hardness and toughness at temperatures well below zero. *Look into it now. Write for informative illustrated booklet, "Lukens 'T-1' Steel." Address Manager, Marketing Service, Room 903, Lukens Steel Company, Coatesville, Pennsylvania.*



LUKENS ®

Helping industry choose steels that fit the job

Labor Developments

1956 Collective Bargaining Results

By S. HERBERT UNTERBERGER

S. Herbert Unterberger and Company
Economists-Consultants on Labor and Industrial Relations

Washington, D. C.-Philadelphia, Pa.

LOOKING back over 1956 reveals that wage increases resulting from collective bargaining ranged generally from 10 to 15 cents an hour. These were running roughly at 3 to 5 cents more than the 1955 increases. In addition, the improvements in various so-called fringe benefits, principally health and welfare programs, pensions, paid vacations, and paid holidays, were included in most of the new contracts.

The other most significant bargaining developments in 1956 were an increased trend to longer term contracts, generally two to three years, and the adoption in many contracts of cost-of-living escalator provisions. In several industries, supplemental unemployment benefit programs were also negotiated.

On the basis of a tabulation of several thousand contracts, the final score in 1956 appears to have been as follows:

Less than 3 percent of the wage settlements involved no wage increase at all.

About 20 percent of the wage settlements involved increases of 5 or 6 cents an hour.

About 22 percent of the wage settlements involved increases of 7 to 9 cents an hour.

About 30 percent of the wage settlements involved increases of 10 to 12 cents an hour.

About 25 percent of the wage settlements involved increases of 13 cents an hour.

These rather substantial 1956 wage increases have been due to a number of factors, the most significant of which were the relatively high level of business activity during that year, and the relatively tight labor market in many areas of the country.

1957 Wage Rises

The picture for 1957 is quite different. That year may go down in labor history as the year of the "automatic wage raise." This is the logical result of the trend which began in 1955 and gained momentum in 1956 toward longer term union contracts. Most of those contracts for two or more years involved an automatic wage increase in 1957. Some of them, in addition, also included so-called cost of living escalator clauses which, because the cost of living has gone into a rising trend, will yield further wage increases in 1957.

Just calling the roll of the automatic wage increases already agreed upon yields a most impressive list. It includes representation from most of the important industries and involves a large number of the companies whose labor agreements are generally regarded as the pace setters. Month by month the story is as follows:

In January the Western Union Telegraph Company gave an automatic wage increase which amounted to an average of 5 cents an hour.

In February the local cartage firms in 13 Mid-western states granted an automatic increase of 8 cents an hour.

In March the Dow Chemical Company is committed to grant an increase of 7 cents an hour, and The Douglas and North American Aircraft Companies are committed to grant increases of 6 and 7 cents an hour, respectively.

In April the bituminous coal industry will grant an increase of 80 cents a day, which amounts to about 10 cents an hour.

In May the Boeing Aircraft Company will grant an increase of 7 cents an hour, and the General Motors Company will grant increases of 2½ percent or 6 cents an hour, whichever is greater.

In June the International Paper Company will grant an increase of 5 percent or 9 cents an hour, whichever is greater. The Chrysler and Ford Automobile Companies will grant increases of 2½ percent or 6 cents per hour, whichever is greater.

In July the steel industry will grant increases of 7 to 13 cents per hour: the Caterpillar Tractor Company will grant increases of 6 to 7 cents per hour, and the Anaconda and Kenicott Copper Companies will grant increases of 6 and 7 cents per hour, respectively.

In August the Aluminum Company of America will grant increases of 7 cents an hour, and the Allis-Chalmers and International Harvester Companies will grant increases of 2½ percent or 6 cents per hour, whichever is greater.

In September the Libbey-Owens-Ford Glass Company and the Pittsburgh Plate Glass Company will grant increases of 5 cents an hour; the General Electric Company will grant 3 percent or 4½ cents per hour, whichever is greater; Bendix Aviation will grant 2½ percent or 6 cents per hour, whichever is greater; and Armour & Company and Swift & Company will grant increases of 7½ cents per hour.

In October the American and Continental Can companies will grant increases of 7 cents per hour, and Westinghouse will grant an increase of 3 percent or 5 to 10 cents.

In November employees of the railroads, except those involved in the actual operation of the trains will receive increases of 7 cents per hour.

A U. S. Department of Labor tabulation summarizes these deferred increases as follows:

Average Deferred Wage Increase	% of Labor Agreements
Under 5 cents	6
5 but less than 6 cents	13
6 but less than 7 cents	28
7 but less than 8 cents	19
8 but less than 9 cents	7
9 but less than 10 cents	16
10 but less than 11 cents	5
11 and/or more	4
Amount not specified	3

In addition to these wage hikes, which have already been agreed to, there are sure to be several other substantial adjustments in important industries. The most important industry to be considered almost immediately is the tire and tube industry, whose labor agreements expire in March.

(*Continued on page* 204)

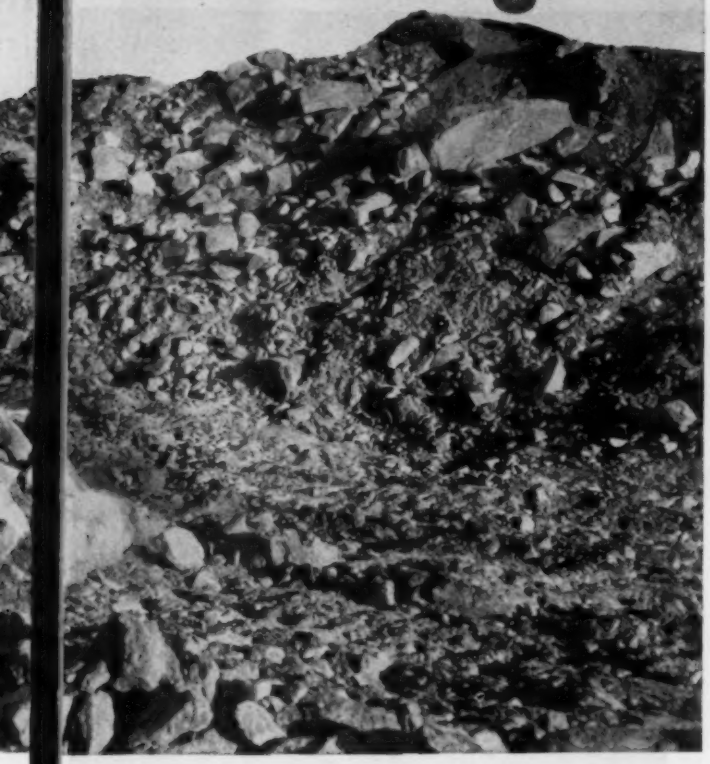
Before you buy any giant-sized
Measure TD-24 giant-sized

With full-time "live" power on both tracks, the TD-24 almost builds the road itself—hugging the mountain slope, giving added *operating ease, safety, and capacity!* That's another bonus from exclusive time-proven Planet-Power steering.

When you're 'dozing through rock and other materials, instant fingertip Hi-Lo shifting is a big cycle-speeder. And it cuts operator effort way down!

Try holding a 19-ton load on the blade with any other crawler this big—making a turn as this TD-24 is doing with both tracks pulling, while stockpiling coal with a special wing-type blade. The TD-24's operator can make "round-house," feathered, or pivot turns—with fingertip ease!

tractor advantages!



When you buy a big crawler look beyond sheer size and weight. You may be paying for enough extra "iron" to cause a startling jump in fuel and upkeep costs. So compare. Weigh bigness against provable working and earning capacity! Measure these giant-sized TD-24 advantages that have proven out over 8 years of on-the-job success!

Eliminates "dead-track drag!"

Does the giant you're considering steer with full-time "live" power and "live" traction on both tracks? TD-24 users by the thousands have proved that any crawler *this big* is obsolete without exclusive, time-proved Planet-Power steering advantages!

Planet-Power steering eliminates power-wasting, load-limiting "dead-track drag." Upgrade, downgrade, or on the level, you can smoothly turn a heavily-loaded TD-24—under positive control!

Does the big one you're looking at give cycle-speeding on-the-go shifting? The TD-24 does! And the exclusive two-speed planetary system teamed with a 4 speed synchromesh transmission —gives instant, stall-preventing and time-gaining Hi-Lo shifting, *without declutching.*

Does that big one you need have the genuine in-seat, seconds-fast, all-weather International gasoline conversion starting? Or the operating ease, power-transfer efficiency, and service-simplicity of the International Cerametallic-faced engine clutch? Or 8 practical speeds *forward and reverse?* Only the TD-24 has all these, plus dozens of other giant-sized advantages!

Prove to yourself the TD-24 beats all other giant-sized power—for *performance value*—for *big-scale ability to make you big money.* Ask your International Construction Equipment Distributor for a demonstration of a Gear-Drive or Torque-Converter TD-24!

INTERNATIONAL® CONSTRUCTION EQUIPMENT

International Harvester Co., 180 N. Michigan Avenue, Chicago 1, Illinois

A COMPLETE POWER PACKAGE INCLUDING: Crawler, Wheel, and Side-Boom Tractors ... Self-Propelled Scrapers and Bottom-Dumps ... Crawler and Rubber-Tired Loaders ... Off-Highway Trucks ... Diesel and Carbureted Engines ... Motor Trucks

Heap-loading the sideboarded International "75" Payscraper in less than a minute proves the economy and efficiency of the TD-24 as a "pusher."

USERS SAY R/M BELTS AND HOSE GIVE YOU

RAY-MAN CONVEYOR BELT...

Outlasts Them All on Tough Hauls!

R/M engineering makes the difference with this heavy duty conveyor belt. Ray-Man Conveyor Belt features a new construction of covers and strength members to resist cuts, tears and abrasion to a degree never before possible. R/M's exclusive "XDC" Cover adds an extra measure of protection and long life not available with any other belt. And beneath the cover, cushioned strength member plies, in an envelope of strong, flexible synthetic fabric, resist the impact of heavy, shock loading and ripping. The belt troughs easily and trains naturally.

Ray-Man Conveyor Belt holds fasteners better than ordinary belts . . . requires no breaker strip. Like all R/M heavy duty belts, it's moisture resistant and mildew-proof. You get longer, trouble-free service . . . "More Use per Dollar" with Ray-Man as well as other R/M conveyor belt constructions, including extra-cushioned Homo cord for unusually abusive shock loading, and R/M Tension-Master for extra long lifts, high tensions.

Write for Bulletins #6915 and #6906

● TRAINS NATURALLY

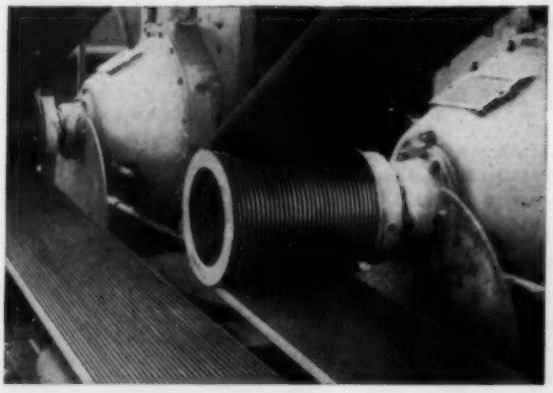
● RESISTS IMPACT

● DOUBLE COMPENSATION RELIEVES OUTER PLY STRESSES

HOMOFLEX HOSE is Easier Handling...Longer Lasting!

The unique construction of Homoflex Hose makes it light, yet strong . . . and flexible as a rope. Made with no pre-set twist, it coils and uncoils in *any* direction *without* kinking. A homogeneous cover, strength member and tube that are virtually inseparable assure easier, safer handling on the toughest jobs. It's easier to couple, too, because it has uniform inside and outside diameters. Homoflex Hose gets more work done, lasts longer . . . gives you "More Use per Dollar" . . . wherever air, water, and other fluids and gases are handled.

Write for Bulletin #6879



R/M POLY-V® DRIVE

Delivers More Power in Less Space!

Single unit belt design of R/M's patented Poly-V* Drive permits *narrower* sheaves to deliver up to 50% *more* power in the *same* space as ordinary V-belt drives . . . *equal* power in as little as ⅔ the space! Poly-V eliminates multiple belt matching problems, too . . . and just *two* belt cross sections meet *every* heavy-duty power requirement.

Write for Bulletin #6638

For the "Smoothest Running V-BELTS Made," Specify CONDOR and R/M SUPER-POWER V-BELTS

**Poly-V is a registered Raybestos-Manhattan trademark.*

RM-708

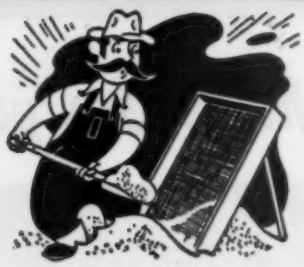
BELTS • HOSE • ROLL COVERINGS • TANK LININGS • INDUSTRIAL RUBBER SPECIALTIES

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Other R/M products: Abrasive and Diamond Wheels • Brake Blocks and Linings • Clutch Facings • Asbestos Textiles • Mechanical Packings • Engineered Plastics • Sintered Metal Products • Industrial Adhesives • Laundry Pads and Covers • Bowling Balls

Screenings



by Ray L. Smith Jr.

PICTURES exert a powerful influence in advertisements. They attract attention (see cut!!), illustrate the product, point up benefits and create desire.

The reason is found in the psychological make-up of the human mind. The eye is used to seeing pictures. The intent and details of a picture are grasped instantly.

Today, thanks to modern techniques of reproduction, it is possible to use pictures extensively. Because it represents a quick, graphic and relatively inexpensive means to portray our picture ideas, photography has become one of the dominant illustrative media.

It is fine to drag in pretty girls if a pretty girl is appropriate to the picture, but a photograph must do more than attract lookers. It must sell the product. So, beware of the overly attractive female model. She may attract more attention to herself than to the product one wants to sell.

Precision Built

VISITORS to the Chicago Road Show no doubt discovered that some of the exhibitors were going in for sleek, stream-lined effects, and to hell with the draperies. This fundamental approach did nothing to reduce the temperature in the Windy City, but it had its points, as any one with half an eye can see.

The caption under the accompanying photograph, sent to us by the manufacturer, states rather arbitrarily: "A total of eight models of wheel and crawler tractors were on display." We are almost certain that none of the other machines were as closely inspected as the gold tractor with platinum-like tracks pictured below. Lovely Mary Linden, adds just that finishing touch.

We suppose, however, that once the customer acquires title, he is allowed *some* latitude in developing other uses for the equipment. After all, the manufacturer may have overlooked one or two latent possibilities.

Never-the-less, we're of the opinion that Mary won't be found in any more exhibits . . . there's certainly very little sponsor identification when she's around.

Potpourri and Succotash

A psychiatrist advised his timid little patient to assert himself. "Don't let your wife bully you. Go home and show her who's boss."

The patient went home, slammed the door loudly and roughly seized his wife. "From now on," he snarled, "you're taking orders from me, see? You're gonna make my supper this minute and when it's on the table you're goin' upstairs and lay out my clothes, see? Tonight I'm goin' out on the town—alone, and do you know who's goin' to dress me in my tuxedo and black tie?"

"You bet I do," was her answer. "The undertaker!"

President inspecting the plant: "Let's see, Wilson, how many years exactly is it that you've been with me now?"

"Thirty-nine, sir," beamed Wilson, "and may I add that in that entire time I made only one trifling mistake!"

"Good work," replied the president, "but from now on, please try to be more careful."

As the salesman signed the register in the Mississippi hotel lobby, he noticed a mosquito crawling across the register.

"I've been in a lot of hotels," said the salesman, "and I've seen a lot of mosquitoes, but this is the first time they ever came down to see which room I was getting."

Mother and Junior were surveying the family album. Presently they came to a picture of a handsome wavy-haired young man.

"Who's that?" asked Junior.

"Why, that's your father."

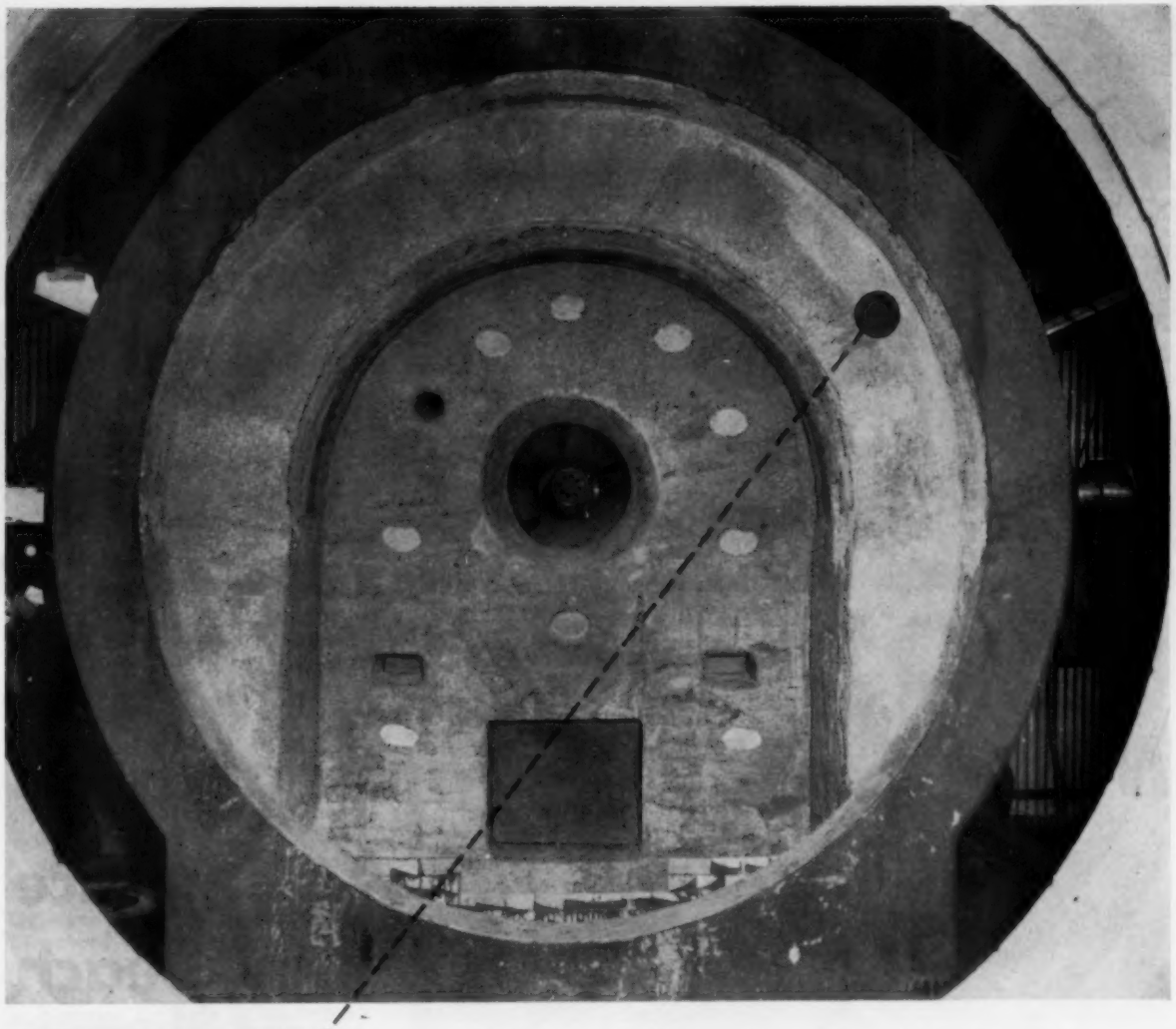
"Yeah?" said Junior skeptically. "Then who's the old bald-headed guy who's been living with us all this time?"

"Could I try on that red dress in the window?" asked the pretty young thing.

"There's no need to do that," the elderly saleslady answered coldly. "We have several fitting rooms."

The tea party was going full swing. One old biddie remarked to another, "You say your daughter didn't get home from the party until 2:30 this morning. Why, my daughter was home before midnight."

"Yes," the mother said, "but my daughter walked home."



Firing Hoods Go In *Fast* with MAX-BOND...

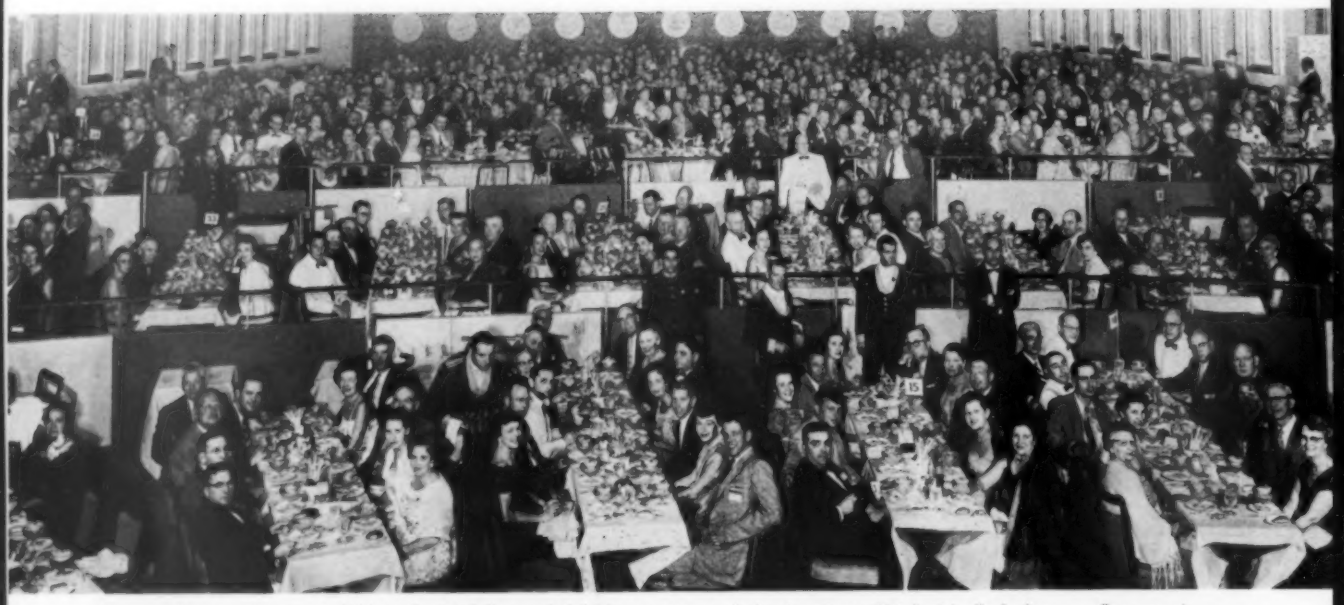
. . . and the kiln is back on the job faster because MAX-BOND doesn't require lengthy "drying-out" time. The kiln can be fired more quickly after installation. Mexico Refractories Company Development Engineers perfected MAX-BOND after years of research; it has proven itself on-the-job. Its workability reduces installation costs; this, plus balanced properties assure longer hood life. MAX-BOND stands both physical and thermal abuse...behaves beautifully throughout the temperature-range up to 3000° F. Abuse it if you will — to increase production — it can take it!

We are able to field-engineer our products to meet your particular requirements — with no obligation. In all respects WE SEE YOUR JOB THROUGH!

MEX-R-CO

MAX-BOND is "Poly-wrapped" to Stay Fresh!
121

MEXICO REFRACTORIES COMPANY
MEXICO, MISSOURI
NILES FIRE BRICK DIV.— Niles, Ohio • NATIONAL REFRACTORIES DIV.— Philadelphia, Pa. • BIG SAVAGE REFRACTORIES DIV.— Frostburg, Md.
Canadian Affiliate: REFRACTORIES ENGINEERING & SUPPLIES, LTD.— Hamilton, Ontario, Canada



The annual banquet, held in the Medallion and Bal Masque rooms of the Americana Hotel, virtually had an overflow crowd.

N.C.S.A.'s 39th Convention

Draws Record Attendance To Miami Beach

Programs offered, popular locale win acclaim of visitors—

The new Americana Hotel on Miami Beach was the convention headquarters. In the foreground are several N.C.S.A. guests enjoying the pool patio.

Another ON THE SPOT Report

WITH an official total registration of 837, the 40th annual convention of the National Crushed Stone Association had an attendance that broke any previous total for an off-show year in the group's history. Held on January 15, 16, and 17 at the Americana Hotel, Miami Beach, Fla., the meeting was highly successful from every point of view—not only for outstanding papers on a variety of subjects, but also for the very enjoyable surroundings of its locale.

Pre-convention meetings of the boards of directors of both the N.C.S.A. and the Manufacturers Division were held on Monday, January 14, and were followed by half-day general sessions on Tuesday and Wednesday, and a full day of discussion on operating and administrative problems on Thursday. Thus, for at least half of the first two days, the members were able to take full advantage of the fine weather that prevailed throughout most of the convention.

Presiding officers for the four business sessions of the open meeting included Norman E. Kelb, N.C.S.A. president, O. E. Benson (General Crushed Stone Co.), C. E. Hogeboom (Consumers Company), and P. V. Corey (Blue Rock Quarry).

Officers and Directors Continuing in office for his second term as president of the National Crushed Stone Association is Norman E. Kelb (Cumberland Quarries, Inc., Indianapolis, Ind.). Elected to the newly-created office of executive vice-president of the association is O. E. Benson (General Crushed Stone Co., Easton, Pa.). Officers re-elected to their former posts include: James Savage (Buffalo Crushed Stone Corp.), treasurer; J. R. Boyd, executive director; and J. E. Gray, engineering director. A. T. Goldbeck, former engineering director, is now serving the association in the post of engineering consultant.

Aside from J. L. Holden (Genesee Stone Products Corp., Batavia, N. Y.) who was elected to the Eastern regional vice-presidency, succeeding Mr. Benson, all incumbent regional vice-presidents were returned to their offices. These include the following: A. J. Cayia (Northern), H. A. Clark (Midwestern), Houston Clinton (Southwestern), R. G. L. Harstone (British Commonwealth), A. W. McThenia (Central), W. C. Rowe (New England), Nelson Severinghaus (Southeastern), and B. P. Woolpert (Western).

In addition to Mr. Kelb (chairman), members of the new executive committee included Mr. Benson, Clarence Camp II (Camp Concrete Rock Co.), T. C. Cooke (Lynn Sand & Stone Co.), W. P. Foss III (New York Trap Rock Corp.), J. V. Owens (Eastern Rock Products, Inc.), R. S. Reigeluth (New Haven Trap Rock Co.), W. C. Rowe

Panel members participating in an operating session discussion of quality control in aggregate production: John Cibula (Bradford Hills Quarry, Inc.); John Bratton Jr. (Superior Stone Co.); Joseph E. Gray (N.C.S.A. engineering director); C. E. Hogeboom (Consumers Company), presiding officer of the session; M. Hankin Jr. (North Jersey Quarry Co.); John Kawaske (Callanan Road Improvement Co.); and L. J. Buriss (Weston & Brooker Co.).

The annual luncheon of the Manufacturers Division of N.C.S.A. was well attended. Chairman of the division is Wayne W. King (W. S. Tyler Co.), seated at the speakers' table.

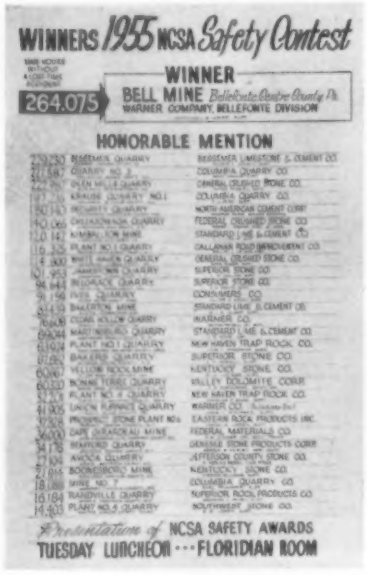
(Rowe Contracting Co.), Nelson Severinghaus (Consolidated Quarries Corp.), W. S. Weston Jr. (Weston & Brooker Co.), who is also a past president, and Wayne W. King (Tyler Co.).

New members of the board of directors are: Emil Berry (Jefferson County Stone Co.) and F. E. Weldon (Fanwood Stone Crushing & Quarry Co.).

Coming Conventions The 1958 annual convention of N.C.S.A. and the biennial machinery exposition will be held February 17, 18, and 19 at the Conrad Hilton Hotel, Chicago, Ill. No action was taken on the 1959 convention. The 1957 midsummer meeting of the N.C.S.A. board of directors will be at the Homestead, Hot Springs, Va., July 18 and 19. In 1958 the board will meet again at The Homestead, on July 17 and 18.

Manufacturers Division The annual luncheon and business meeting of the Manufacturers Division of N.C.S.A. was held on January 17. In the absence of Richard D. Ketner (General Electric Co.), chairman, Frank Briber Jr. (Allis-Chalmers Mfg. Co.) gave the report of the membership committee. The Division acquired six new members during the last year and lost one, for a net gain of five and a new record of 114 members. The new members are: Canadian Industries, Ltd., Montreal, Que.; DuPont Co. of Canada Ltd., Toronto, Ont.; Electric Steel Foundry Co., Portland, Ore.; Howe Scale Co., Rutland, Vt.; Manganese Steel Forge Co., Philadelphia, Pa.; Olin Mathieson Chemical Corp., East Alton, Ill.

Wayne W. King (W. S. Tyler Co.), was re-elected chairman for 1957. Re-elected as vice-chairmen were H. W. Newton (Barber-Greene Co.) and W. A. Rundquist (Pioneer Engineering Works). W. E. Collins Jr. (Atlas Power Co.) is the new vice-chairman. The two representatives to serve on the N.C.S.A. board of directors, in addition to Mr. King, are L. A. Eiben (Northern Blower Co.) and R. D. Ketner (General Electric Co.). The above-mentioned, with Norman E. Kelb, president of N.C.S.A., form the executive committee of the Division. The four new directors are I. F. Deister (Deister Machine Co.), W. B. Hicks (Hewitt-Robins, Inc.), L. C. Mosley (Marion Power Shovel Co.), and R. W. Reedy (Kennedy-Van Saun Mfg. & Eng. Co.).



Listed on this poster in order of man-hours of operating without a lost-time accident are the N.C.S.A. safety contest winners for 1955.

Safety Awards Winners of the N.C.S.A. annual safety contest in 1955 received deserved recognition at the greeting luncheon, held on the first day of the open convention. The number of companies operating quarries where not a single lost-time accident was experienced showed a jump of 40 percent over the preceding year. In 1955, this outstanding record was achieved by 30 operations.

Clarence Camp II (Camp Concrete Rock Co.) presided at the luncheon during which the awards were made. Mr. Camp noted that this annual safety contest has been conducted since 1926 under the auspices of the Bureau of Mines, and acknowledgment was made to the *Explosives Engineer Magazine* for its contribution of the bronze plaques that are awarded to the leading contestant. The awards were made by Walter A. Dearth (General Crushed Stone Co.) of the association's accident prevention committee. The 1955 contest winner was the Warner Company, whose Bell Mine (Bellefonte Division) again took top honors—this time with a record of 264,075 man-hours during which there was no lost-time accident.

Honorable mention and N.C.S.A. certificates were distributed to the remaining 29 winners who are named in an accompanying photograph.

Representatives of the N.C.S.A. safety contest winners include (bottom row): Robert L. Walker (Federal Crushed Stone Corp.); Ralph E. Roscoe (Bessemer Limestone and Cement Co.); Emil Berry (Jefferson County Stone Co.); Joseph O. Sherod (the Warner Company, whose Bell Mine, Bellefonte Division, took top honors); W. E. Schmidt (Columbia Quarry Co.); Woodrow D. Poole (North American Cement Corp.). Middle row: F. H. Newcomer (Valley Dolomite Corp.); Myron Filkins (Callanan Road Improvement Co.); Charles F. Bass (New Haven Trap Rock Co.); Whit J. Wise (Southwest Stone Co.); John H. McKernan (New Haven Trap Rock Co.); Harry McGuirk (General Crushed Stone Co.); George B. Phillips (Standard Lime and Cement Co.); James L. Holden (Genesee Stone Products Corp.). Top row: Burr Shaver (General Crushed Stone Co.); Jess Haney (Eastern Rock Products, Inc.); John Bratton (Superior Stone Co.); A. W. Zimmer Jr. (Federal Materials Co.); and Walter C. Metz (Consumers Co.).

Boyd's Report As a preface to his annual report, J. R. Boyd, executive director of N.C.S.A., made reference to a letter in which a business man indicated his personal evaluation of trade associations. It was noted that the joining of individual forces within a given industry not only aids such an association as a whole, but also makes it possible for each individual of the group to solve many internal problems by drawing upon the collective experience and assistance of his industry association.

With this evaluation as a background, Mr. Boyd enumerated several points on which this association is working for the benefit of its members. It was noted that N.C.S.A. has played an important role in the field of percentage depletion—both in its passage as tax legislation, and in efforts to solve the many problems incidental to its administration.

In another area, the association's efforts in *ex parte* proceedings before the Interstate Commerce Commission were pointed out as an aid to individual members in controversy with state government in the matters of intra-state rates. Among other activities maintained to aid the membership, Mr. Boyd referred to the group letters in which current information on industry problems, legislation, accident prevention reports, cost accounting data, etc., are disseminated to the member companies.

As a supplement to the above report, Richard M. Prewitt, assistant to the executive director, commented on the estimates prepared by N.C.S.A. on the aggregates required by the Federal-Aid Highway Program during the years 1956 through 1959, inclusive. It was noted that in a membership letter distributed last fall the estimated tons of aggregate required during those years by the four major highway systems were developed on "usage factors"—the latter representing a compilation of weighted averages of reports by highway contractors on federal-aid highway construction projects during 1953, 1954, and 1955.

These "usage factors" were then converted into estimates of tonnage stemming from use of all known federal-aid and state matching funds as authorized by the Federal-Aid Highway Acts of 1954 and 1956. It was underlined that estimates provided are applicable only to federal-aid construction, and the accuracy of the estimates is dependent upon the full use, during the year of fund-apportionment, of all federal-aid and state-matching funds by the various states.

Gray's Report In opening his first report as engineering director for the association, Joseph E. Gray noted that his staff is making every effort to provide prompt engineering service to those members requesting assistance. Due to the fact that his former post of field engineer has not as yet been filled, Mr. Gray has carried on that phase of association work while also assuming the duties of his new office.

It was suggested that, until the field post has been filled, those members desiring engineering service phone, wire, or write directly to the N.C.S.A. offices for assistance, rather than wait for a routine call of an association engineer.

This group of directors of the Manufacturers Division include (bottom row): L. C. Mosley (Marion Power Shovel Co.); N. E. Kelb, N.C.S.A. president; Wayne W. King (W. S. Tyler Co.), chairman of the division; F. A. Pampel (Chain Belt Co.); L. A. Rhodes (Stedman Foundry & Machine Co.); G. D. Fraunfelder (Easton Car & Construction Co.). Middle row: J. R. Boyd, N.C.S.A. executive director; L. A. Eiben (Northern Blower Co.); Mrs. E. S. Gill (Gill Rock Drill Co.); W. A. Rundquist (Pioneer Engineering Works); B. R. Maloney (E. I. du Pont de Nemours & Co.). Top row: H. R. Harrington (Goodyear Tire & Rubber Co.); W. E. Collins Jr. (Atlas Powder Co.); R. S. Wells (Stephens-Adamson Mfg. Co.); R. W. Reedy (Kennedy-Van Saun Mfg. & Eng. Corp.); and F. E. Briber Jr. (Allis-Chalmers Mfg. Co.).

A summarization of some of the laboratory projects during the last year dealt with appraisals of stone sand, the scratch hardness test, reference to the installation for measurement of pavement slipperiness, and investigation of a problem in determining cement factors for concrete of high flexural strength.

In referring to the problem of alkali reactivity, Mr. Gray noted that while that difficulty is not widespread in this industry, it is serious when it does occur due to resultant rejection of aggregate for concrete. It was pointed out that this situation is covered by A.S.T.M. specifications for concrete aggregates C 33-55T, section 8 (b), in which it is indicated that the presence of injurious amounts of alkali-reactive materials in coarse aggregate may be offset by the use of low alkali cement or by the addition of a material that will inhibit undue expansion caused by an alkali-aggregate reaction.

According to the engineering director, it is believed that the intent of the above requirement in the specifications was to indicate precautionary measures in the presence of potentially reactive aggregate. It was noted that the Bureau of Reclamation and the Corps of Engineers have never rejected an aggregate because of its possible reactivity, but have employed such with the proper precautionary measures.

With respect to future research activity by the association staff, Mr. Gray commented on two areas that appear most promising from this industry's standpoint. These were investigations directed toward stopping reflection cracking—the transference of cracks to a bituminous concrete surface from such fissures in an older underlying portland cement concrete base, and the study of aggregates consumed in the growing prestressed concrete field.

Research on the former has indicated the possibility of using a larger maximum size aggregate, with an increase in bituminous concrete thickness, as a method that would be comparable cost-wise with other approaches to the problem—such as the use of welded wire reinforcement, or the addition of rubber to the asphalt mix for the purpose of increasing elastic properties.

SUMMARY OF REPORTS OF REGIONAL VICE PRESIDENTS
COVERING 1956 AND THE OUTLOOK FOR 1957

	New England	Eastern	Central	Southeastern	Northern	Midwestern	Southwestern	Canada
1. How did volume of crushed stone business during 1956 compare with 1955?	Avg. Inc. +20%	Avg. Inc. +12%	Avg. Inc. +7%	Avg. Inc. +7%	Avg. Inc. +10%	Avg. Inc. +18%	Small Inc.	Up
2. How did price level during 1956 compare with 1955?	Avg. Inc. 2%	Avg. Inc. 5%	Up	Small Inc.	Avg. Inc. 6%	Avg. Inc. 8%	Avg. Inc. 15%	Same
3. What relation did volume of demand bear to capacity during 1956?	100%	84%	90%	84%	100%+	90%	--	100%
4. What percentage (approx.) of crushed stone business in your territory in 1956 went to:								
a. Highway construction	75%	67%	47%	42%	10%	58%	15%	48%
b. Railroad ballast	4%	14%	7%	13%	2%	3%	40%	6%
c. Building construction	19%	10%	19%	39%	5%	27%	--	15%
d. Chemical and metallurgical uses	--	2.3%	15%	6%	77%	1%	15%	30%
e. Agricultural limestone	--	4%	9%	1%	4%	9%	1%	.4%
f. Riprap	1%	.7%	--	.4%	1%	--	19%	.6%
g. Other uses	1%	2%	3%	4%	1%	2%	10%	--
5. Do you anticipate much change in this distribution during 1957?	No	No	No	Yes Highway	No	No	No	No
6. What is the prospect for crushed stone business in your territory during 1957?	Excellent	Good	Good	Good	Good	Good	Good	Excellent
a. Will it increase or decrease from 1956?	Same	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.
7. Has additional aggregate capacity been developed during 1956?	Yes	Yes	Yes	Yes	--	Yes	No	Yes
a. Nature of additional aggregate capacity developed in your territory during 1956	Temp. Port.	Plant Modernization	New Plants Modernization	New Plants (Semi-perm. Port.	--	Plant Modernization	--	Double Shifts

Breakdown by areas:

New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)
Eastern (Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania)
Central (Kentucky, Ohio, Tennessee, West Virginia)
Southeastern (Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Virginia)
Northern (Michigan, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Wisconsin)
Midwestern (Illinois, Indiana, Iowa, Kansas, Missouri)
Southwestern (Arizona, Arkansas, Louisiana, New Mexico, Oklahoma, Texas)
Canada

In regard to concrete for prestressing, Mr. Gray noted that the following special characteristics are required: high strength, high durability, light weight, and low creep. It would appear, it was said, that crushed stone would most fully meet the above requirements. The point was made that, through further research, it is possible for crushed stone to hold a large part of that new and expanding market.

Regional Activity A report on the conditions existing in the industry during 1956, along with reactions to the potential of the current year, was summarized in a table which was distributed to the membership.

The optimism of producers, and the outstanding record of the past year, as described in the annual review and forecast section of the January 1957 issue of PIT AND QUARRY, is strongly reflected in the accompanying chart prepared by the N.C.S.A.

Highway Program A. C. Clark, deputy commissioner, Bureau of Public Roads, opened a highly informative discussion on crushed stone in the new highway program with a reassurance for those who fear that the accelerated rate of highway construction will result in a sacrifice of quality.

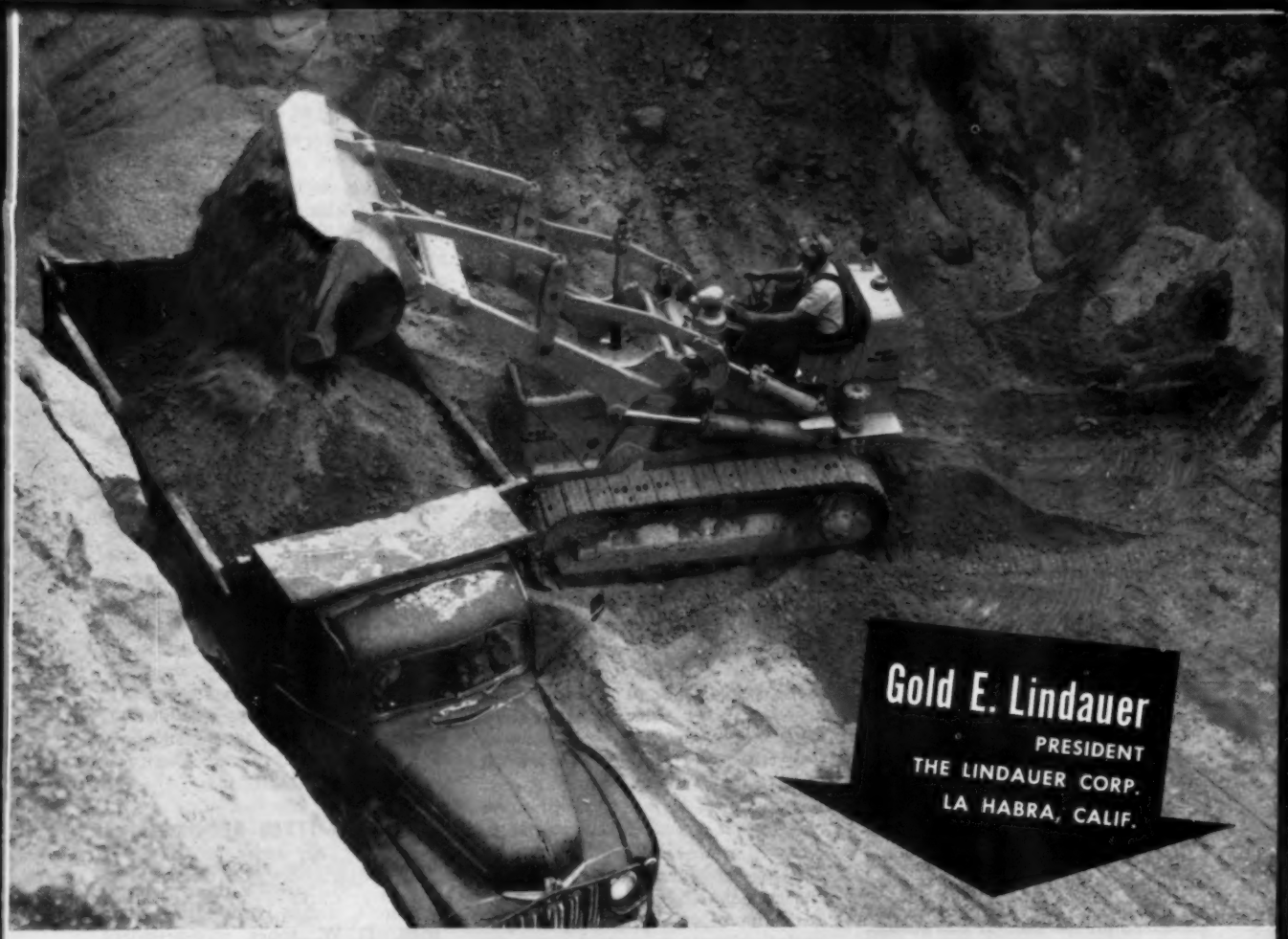
Quoting from a recent speech by John A. Volpe, federal highway administrator pro tem, Mr. Clark indicated that it would be tragic to "jeopardize this outstanding program through any letdown of supervisory or engineering standards. To the contrary, under the many-sided exigencies of this nationwide program, we shall need to lift our sights." The speaker made particular commendation of the contributions to highway engineering made by the N.C.S.A.'s engineering staff, and took note of the efforts of A. T. Goldbeck and J. E. Gray.

Noting that acceleration of the highway program is quite definite, Mr. Clark referred to the 1956 highway legislation in which it was indicated that much of our highway system is inadequate to meet the needs of local and interstate commerce, and of the national and civil defense. In section 116(b) of the Federal Aid Highway Act, Congress said, "It is further declared that one of the most important objectives of this Act is the prompt completion of the Interstate System."

Among the many points of interest to producers brought out by Mr. Clark was the statement that of all

Left: L. J. Boxley Jr. and Mrs. Boxley relaxing at the social headquarters. Mr. Boxley is a grandson of one of the founders of N.C.S.A.

Right: A featured speaker at the convention, A. C. Clark, deputy commissioner, U. S. Bureau of Public Roads, addressed the group on the quality requirements for materials to be used in the new highway program.



This No. 955 Traxcavator* loads 750 yards a day and "that doesn't begin to make it work"

Each 7½-hour day, this new CAT* No. 955 Traxcavator loads about 750 yards of sand for construction work at Lindauer Corp., La Habra, Calif. It also handles decomposed granite and topsoil. Mr. Lindauer likes its high production and speed of operation.

"We like everything about this Traxcavator," he says. "The hoist works fast and you don't have to sit and wait for it. It's loading 750 yards a day and we haven't really begun to make it work."

Operators like the way this unit handles, too. Bucket lift and tilt levers are positioned for easy one-hand operation. And the exclusive Caterpillar oil clutch reduces maintenance and adds to the machine's long, productive work life.

This fast 75 HP excavator loader has a 1½-cu.-yd. bucket, 80 inches wide. The bucket has full 40-degree tilt back at ground level to prevent spillage. And its 128-inch lift height makes easy loading for trucks.

There are three Caterpillar-built Traxcavators. The smaller No. 933 has a 1-cu.-yd. bucket and a 50 HP Cat Diesel. The larger No. 977 has a 2¼-cu.-yd. bucket, powered by a 100 HP engine.

Your Caterpillar Dealer will demonstrate the model that fits your exact needs on *your* job . . . at *your* convenience. And he backs each machine with 24-hour service, and quality factory parts.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Caterpillar, Cat and Tractavator are Registered Trademarks of Caterpillar Tractor Co.

WANTED—
THE HARD WORK

P. V. Corey (Blue Rock Quarry), left, presided at the final session at which James W. Douthat, right, spoke on recent developments and trends in Congressional legislation. (Mr. Douthat is assistant vice-president, government relations division, National Association of Manufacturers.)

the materials needed in the program, all types of aggregates (including those used in ready-mixed concrete and bituminous material) represent the largest single cost item—accounting for one-fourth of the cost of all materials and supplies purchased by the contractor.

Forty percent of the total aggregate tonnage consumed, the speaker said, is crushed stone, either purchased from commercial sources or produced on the site. It was further noted that estimated requirements of crushed stone for highway construction in 1957 are about 214,000,000 tons. Added to this amount would be another 54,000,000 tons for estimated normal maintenance.

It has been further estimated, Mr. Clark said, that the crushed stone to be furnished annually to the program will rise gradually to about 304,000,000 tons by 1960, and that requirement will remain at about that figure through 1967. A small decline to about 269,000,000 tons is then anticipated. On the basis of experience in highway construction, it is assumed that 42 percent of the foregoing tonnage figures will be provided by commercial operators.

Noting the opportunity and the challenge inherent in the expanded highway program, the speaker cited improvement in materials, methods, and machines, as well as in engineering procedures. It is believed, he stated, that with the co-operation of all segments of the highway industry, including that represented by N.C.S.A., the road program can be accelerated to the high level considered essential to the national welfare, and that this acceleration will take place with no sacrifices in the quality of the finished product.

Management Skills In his interesting discussion on *Improving Management Skills*, William A. Gill, management consultant of Alexandria, Va., brought out the encouraging point that it is possible to be a good manager without special training or long experience. But, he emphasized one must work at it incessantly as this skill is more important now than ever before. Management must know the subject well enough to keep pace with the most important principles and developments.

According to Mr. Gill, the big automobile companies were the first to realize the importance of skilled management and to gain important benefits as a result. The Federation of American Engineering Societies, organized to make management studies, investigated six major industries and found that waste varied from 29 to 64 percent of the money spent. The building trades industry, including crushed stone, was about average, with 53 percent waste. No plant or office, he declared, is without a leak.

Quoting the American Management Association, Mr. Gill stated that to be a good manager: one must be a good planner, must have objectives of all kinds in order to get results; one must be a good organizer, must know the relationship of each job to the others, and be able to delegate authority; one must follow sound procedure. It is here that much of the waste occurs, and expert service may be needed. This help should be of a temporary nature, however, and the necessary skills must be acquired. A good manager must also promote personnel development, and give employees a recognizable ladder to climb. He must be able to get things done through other people; he must set standards of performance and gauge future requirements; finally, he must evaluate results and the future potentials of employees. Company heads must also evaluate their own skill lacks and develop them in order to set an example for subordinates.

COMMITTEE REPORTS

Safety In the absence of H. H. Kirwin (Eastern Rock Products, Inc.), committee chairman, T. W. Jones, vice-president, New Haven Trap Rock Co., presented the annual report of the accident prevention committee for the 12-month period ending November, 1956. It was noted that the committee could take pleasure in reporting another good year on the basis of a record which shows but one fatality —the latter being due to a railroad accident. There were 6 permanent partial injuries reported, and 176 of a temporary nature.

While the above record is encouraging, the speaker noted, however, that unfortunately there were 4 fewer companies and 6 fewer plants taking an active part in the N.C.S.A. accident prevention program than in the preceding year. The committee feels, it was said, that those member companies actively supporting the program can definitely point to im-

This group of top N.C.S.A. officers include: J. R. Boyd, executive director; O. E. Benson (General Crushed Stone Co.), who was elected to the new office of vice-president; N. E. Kelb (Cumberland Quarries), who is beginning his second term as president of N.C.S.A.; and James Savage (Buffalo Crushed Stone Corp.), re-elected as treasurer. (The sad news of Mr. Savage's death on February 7 was received recently.)

provement in their individual accident records. It was suggested that, if for no other reason, the cost saving through cutting of losses and reduction of compensation insurance rates should encourage all member companies to take an active part.

Two important steps of potential benefit to the members were reported. During a recent meeting at the National Safety Congress in Chicago, it was decided to establish a committee to work out a set of minimum safety standards for the industry. At the same meeting, an editorial committee was appointed for the purpose of disseminating information to members in keeping them currently informed on matters of safety.

Subrogation In bringing the membership up to date on the latest developments in subrogation, W. C. Rowe (Rowe Contracting Co.), chairman of the N.C.S.A. subrogation committee, and Donald B. Sherwood, assistant general manager of the National Board of Fire Underwriters, collaborated in reporting the latest co-operative efforts by the industry and insurance organizations.

Mr. Rowe noted that in the last several months a number of things have happened in rapid succession in promoting a solution for subrogation problems. He reported that, in response to a direct approach by a Midwestern producer involved in blasting damage controversy, the National Board of Fire Underwriters took a keen interest in getting at the facts of the case. This approach was a welcome one, Mr. Rowe stated, since despite the local nature of that investigation the principle involved was pertinent to quarry blasting operations and to insurance people throughout the country.

After this, the N.C.S.A., along with other national industry groups, established a joint working committee charged with co-operating with the National Board of Fire Underwriters in studying and developing a proper and equitable approach to insurance claims emanating from the use of dynamite.

The next important step, the speaker noted, was the co-operative effort of both fire and casualty companies in revising the technique of approach to blasting claims. This came about through the efforts of the industry committee, which convinced the insurance people of the need to get all the facts. As a result of concerted effort on the part of the fire and casualty groups an informative book of instructions entitled *A Guide for Adjusters* was developed as an aid to claim and other investigators in approaching blasting damage claims.

Captain W. C. Mott, U.S.N., Office of the Chairman, Joint Chiefs of Staff, who addressed the greeting luncheon guests on the first day of the convention.

Mr. Rowe stated further that while the guide will not make experts of the adjusters, it will, through intelligent use, alleviate the subrogation problem by indicating to the adjusters the things to look for in blasting damage, as well as to point up many factors in structural damage due to other causes. It was added that co-operation must be provided the adjusters by quarry operators to assure the benefits of this new approach.

Noting that a number of people contributed valuable assistance in compiling the above guide, Mr. Rowe emphasized the outstanding efforts of Mr. Sherwood, who acted as co-ordinator of the entire project.

In providing backgrounds to the above comments, Mr. Sherwood opened his discussion by indicating that for the last 20 years, in his experience, nothing had been done on the part of insurance firms in the realm of blasting damage other than to estimate the cost of repairs for the insured, make payment, and turn the rest over to a subrogation attorney for recovery. This over-simplified approach was given a jolt about two years ago, the speaker said, when the occasion arose for a number of leading specialists in explosives, vibrations, and insurance to meet at a midwestern quarry operation.

As one result of that meeting, it was said, fire and casualty groups recognized the need for an extensive educational program—not only for the benefit of their members, but also to acquaint industry with the insurance firms' problems. This led to a subsequent gathering of representatives from industry, explosives manufacturers, vibration experts, contractors, and the Bureau of Mines.

As a major development, industry, property insurance, and casualty insurance groups set up subcommittees. The co-operative work of these subcommittees, the speaker noted, led to the development of the blasting guide for adjusters.

Mr. Sherwood indicated a growing ability of legal representatives and claims adjusters to recognize factors other than blasting as the cause of much structural damage. He indicated that the substantial country-wide educational program for insurance groups—including distribution of the adjusters guide—is having a desirable effect since, for the first time, a technical problem has been delineated in lay language.

In conclusion, the speaker expressed appreciation of the liaison that has been established between the industry and insurance groups, and added that with continuing educational efforts on the part of both, what might have been a continuing problem will be resolved with equity, and with more understanding on the part of the general public.

RECORDS, STORAGE, SCALPING, QUALITY CONTROLS

Quarry Efficiency Records Following the presentation of a movie, the *Fourth Seacoast*, which depicted interesting phases and results of construction on the St. Lawrence Seaway, T. C. Cooke, president, Lynn Sand & Stone Co., Swampscott, Mass., opened the operating session on Thursday morning with a discussion on quarry efficiency standard record keeping.

Mr. Cooke noted that adherence to the efficiency formula discussed below, in preparing quarry reports, would provide for an exchange of information among association members on a standard basis. For this purpose, it was stated, the records should be maintained on an annual basis. The formula followed establishes an efficiency figure (in tons per man-hour) which is equivalent to tons quarried divided by the number of man-hours. It was indicated that an average of 4 to 7 tons per man-hour is the usual result. Factors that were indicated to have no effect

(*Continued on* page 115)

SYMONS® SCREENS

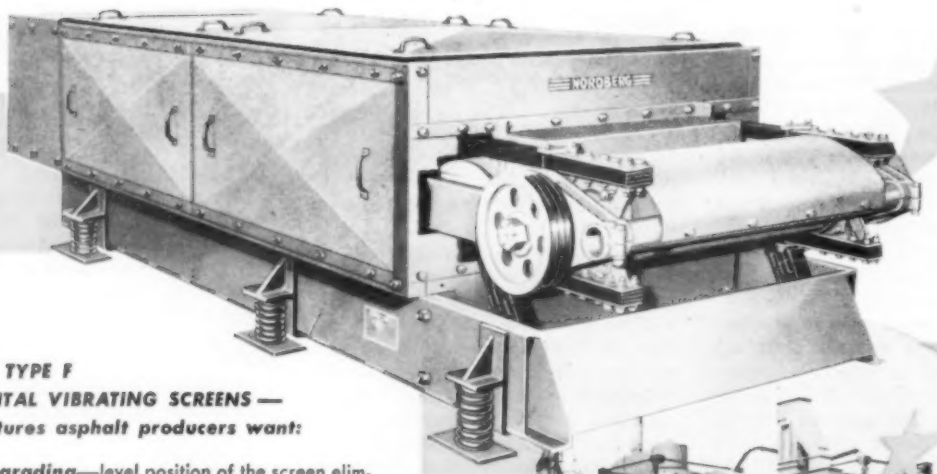
for accurate sizing in bituminous

Aggregate used for multi-aggregate bituminous mix *must be accurately sized* to meet today's exacting specifications. That's why prominent asphalt plant manufacturers *standardize* on Symons Type F Horizontal Vibrating Screens.

Read why these leading manufacturers specify Symons Screens . . . good reasons why you too will benefit with Symons Type F Screens handling your separation jobs.

Write for literature today.

NORDBERG MFG. CO., Milwaukee, Wisconsin

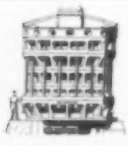


SYMONS TYPE F HORIZONTAL VIBRATING SCREENS —
Features asphalt producers want:

- ***Better grading***—level position of the screen eliminates bouncing and cascading of material along deck and leaves the full opening of the mesh available for screening. Positive action thoroughly agitates material and more quickly stratifies it for closer sizing.
- ***High capacity***—positive vigorous screening and conveying action gives the "F" Screen greater capacity than is possible with inclined type screens.
- ***Adaptability***—installed in a level position with low overhead requirements, the "F" Screen shortens elevators, simplifies construction and reduces overall dimensions of the plant. Being free from vibration, there is no tendency to shake scales or other measuring devices.
- ***Multiple separation***—with multiple decks and many varied screen sizing possibilities, including gap, lower deck, versatility of sizing to meet any specification is possible with the "F" Screen.
- ***Low maintenance***—drive unit with bearings and motor are located outside the screen housing, away from dust and heat.

▲

Standard Equipment on SIMPLICITY Plants. "We have long standardized on the use of Symons Screens in Simplicity Plants. One big reason is that highway engineers realize that accurate screening means much to the durability of finished asphalt pavements," says Wm. C. West, of The Simplicity System Company.



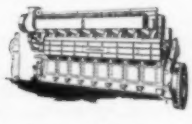
SYMONS PRIMARY GYRATORY CRUSHERS

SYMONS CONE CRUSHERS

GRINDING MILLS

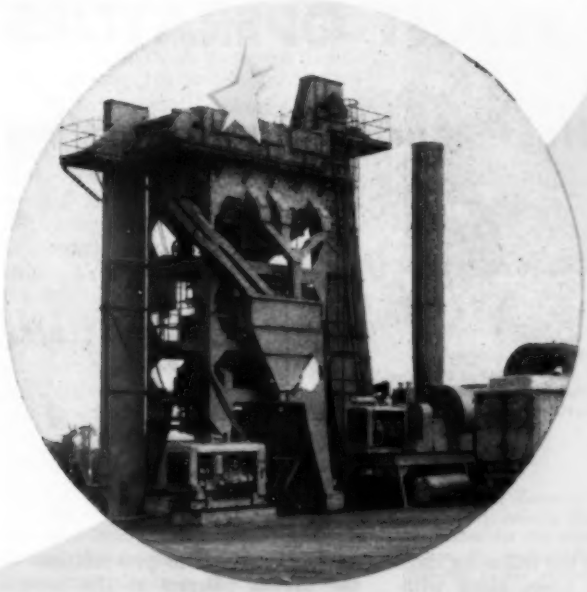
SYMONS V-SCREENS

ROTARY KILNS and COOLERS



DIESEL ENGINES — 10 to over 12,000 H.P.

ARE THE CHOICE mixing plants



▲

Standard Equipment for MADSEN. Madsen Works has used Symons Screens exclusively (unless otherwise specified by customer) since 1930. Here's why, says W. M. Madsen, V.P., Research & Development:—"Accuracy of sizing with a minimum of carry-over; simple to adjust; easily serviced; rugged, simple, accessible and well designed."

◀ ***Used Exclusively by WARREN BROTHERS CO.*** "In the past eight years we have installed close to forty Symons Screens of various sizes. Our satisfaction with their performance must be apparent," says R. C. Paine, Chief Engineer.

▲

Preferred by KOEHRING-WATEROUS, LTD. "We use Symons Screens because they have complete customer acceptance. We like the design which permits the drive unit to be mounted completely outside a dust enclosure over the screen, away from dust and heat," says N. L. Elliott, Manager, Road Equipment Sales Division.

▲

Specified by STANDARD STEEL CORP. "We utilize the Symons Screen on all our plants and find them to be especially suitable due to their ruggedness, high gradation control, and because the operating mechanism is away from the heat," says M. B. Preeman, Manager, Road Machinery Division.

NORDBERG MACHINERY **NORDBERG**

SYMONS SCREENS NORDBERG

MACHINERY FOR PROCESSING ORES and INDUSTRIAL MINERALS

NEW YORK • SAN FRANCISCO • ST. LOUIS • DULUTH • WASHINGTON
TORONTO • MEXICO, D.F. • LONDON • JOHANNESBURG

BUILD BETTER ROADS TODAY · FOR A GREATER AMERICA ·

As exhibited at the 1957 Road Show

AMERICAN ROAD BUILDERS ASSOCIATION

SYMONS . . .
A REGISTERED NORDBERG TRADEMARK KNOWN THROUGHOUT THE WORLD

© 1956, Nordberg Mfg. Co.

S256

Another ON THE SPOT Report

SLAG PLANT OPERATORS

Hold Fourth Annual Meeting

By ROY L. PECK

THE fourth annual plant operators' meeting of the National Slag Association took place on January 17-19, at the Dearborn Inn, Dearborn, Mich. Both from the standpoint of attendance and subject matter discussed by the 34 participants, the meeting was most successful.

The highlight of the meeting was the inspection trip to the three modern slag processing plants of the Edward C. Levy Company, Detroit, on the second afternoon of the meeting.*

Two of the plants purchase, haul, process, and sell the blast-furnace slag from Ford's huge River Rouge steel producing plant. Opened in 1949, Levy's Dix Ave. No. 1 plant has been enlarged to its present capacity of 1,800,000 tons yearly. The other two complete and separate plants have been built in nearby locations. One of these processes expanded lightweight slag from Ford, while the other produces heavy slag aggregates from the slag of the McLouth Steel Co., Trenton, Mich.

Edward C. Levy, president, and his son, Edward C. Levy Jr., vice-president of the firm, acted as hosts of this year's meeting. On the first evening, the operators and their wives were treated to a dinner and entertainment at one of the prominent Detroit dining spots. Buses were furnished to handle transportation to this club, as well as for the inspection trips on the following day. The wives of the hosts, along with a number of Mr. Levy's staff members, contributed a good share of the special attention accorded the ladies of the group. At the close of the meeting a resolution was adopted expressing the appreciation of all for the courtesies and favors extended to the group by the Levy Company.

Another important feature of the meeting was the presentation of the PIT AND QUARRY trophies to the annual winners of the 1955 N.S.A.-sponsored slag plant safety contest. Roy L. Peck, field editor, PIT AND QUARRY, made the presentations of the bronze plaques at the annual luncheon on the first day.

The Duquesne plant of the Duquesne Slag Products Company, Pittsburgh, Pa., was awarded the Class A trophy (for plants operating 60,000 or more man-hours) for its outstanding record of 140,298 man-hours without a disabling accident during the fiscal year from April 1, 1955, through March 31, 1956. The Duquesne plant entered the N.S.A. safety contest in 1949. During five years of steady participation, the plant operated 841,690 man-hours

*See PIT AND QUARRY, May, 1950, and January, 1956.

The group of operators assembled to discuss mutual plant problems and solutions.

Edward W. Bauman, managing director of N.S.A., who was given a vote of thanks for the excellent arrangements for the meeting.

with only 12 injuries to its employees. This was the first time that this plant reached the winner's circle, and special commendations are due to all employees of this operation for their try - and - try - again attitude. The group had 13 contestants with injury-free records for 1955, which including the winner, ranked from 1 to 13 in order of exposure during the slag year.

The Portsmouth plant of the Standard Slag Company, New Boston, Ohio, took top safety honors in Group B of the contest, for having worked 58,986 man-hours without a lost-time disabling injury, and for this outstanding record received the trophy plaque in Class B (plants operating less than 60,000 man-hours). This plant was also a participant in all seven years of the competition. For 6 of these years it was operated with an injury-free record. For the first time Standard Slag was awarded the coveted plaque and it was also the first time the plant was operated for a period long enough to qualify for top honors in the group. Only two lost-time injuries were incurred during the seven-year participation. Ten other plants in this group were operated during the year without a disabling lost-time accident.

Contributions of employees and officials of the winning plants in eliminating injuries throughout the 1955 contest period were recognized by the award of individual Certificates of Accomplishment in Safety, by the Bureau of Mines. The certificates were presented to representatives of the companies by Edward W. Bauman, managing director, N.S.A. (Names of the plants having these injury-free operations and those receiving the certificates were listed in the December, 1956, issue of PIT AND QUARRY.)

Any plant may be enrolled in this annual competition, on application to the Branch of Accident Analysis, Division of Safety, Bureau of Mines, Washington 25, D. C. After enrollment, eligibility is maintained by forwarding a monthly summary of man-hours of employment and a complete report for each lost-time or disabling injury occurring at the plant.

A dozen or more subjects were thoroughly discussed by the operators in the two sessions devoted to an exchange of views among those present. It is felt that this type of intercourse of ideas is highly beneficial to the participants, in that in such a small group each representative has ample opportunity to express his views, offer data, or present questions

The fourth annual meeting of the Plant Operators Committee of the National Slag Association was held January 17, 18, and 19 at the Dearborn Inn, Dearborn, Mich.

Right: K. K. Kagarise, Standard Slag Company (left), retiring chairman of the program committee for this meeting, with J. A. Carnathan, Birmingham Slag Company, retiring chairman of the operators committee.

Right: Hosts of the meeting included the following from the Edward C. Levy Company, Detroit, Mich.: Edward C. Levy Jr., Karl Koropp, and Edward G. Schwoppe.

Below: A group of the operators included (left to right): Wilson E. McDermut, Illinois Slag and Ballast Company; Edward C. Levy Jr., Edward C. Levy Company, newly-elected chairman of the committee; J. A. Carnathan; Gerald S. Snyder, Buffalo Slag Company, chairman, program committee for next year's meetings; and K. K. Kagarise.

multiwall valve troubles with Bemis SHUR-SEAL® valves

sleeves out of place

sleeves missing

valves stuck together

The integral sleeve of Bemis SHUR-SEAL Pasted Valve Multiwalls is a special extension of any of the plies or of several of them, extended to the same or different lengths. Thus the valve can be tailor-made to fit your product. It can NOT be out of place . . . or missing . . . or stuck together.

With the integral sleeve, the flap is always there, always in place, always acts the same in every bag. It opens quickly and easily at the packer. It can never interfere with the packer spout entering the valve and it will never be pushed into the bag to get into the product.

A tailor-made variation of the SHUR-SEAL valve will provide you with the exact bag for your product and packing requirements. Check with your Bemis Man... he'll help you determine just which variation of the SHUR-SEAL valve is correct for you.

Another Bemis first . . .

for YOUR benefit

General Offices—St. Louis 2, Mo.
Sales Offices in Principal Cities

for someone else to answer. The interchange of opinions is unhampered by any reporting of the remarks. An agenda of the subject matter to be discussed had been mailed to all directors and plant operators in order that each could consolidate his thinking on the various subjects, without loss of group time.

Among the subjects listed on this agenda were the following: mechanical and electrical innovations; application of feed-back and other types of automatic systems to slag processing operations; practicability of the use of 45-deg. conveyor belt idlers on plus 3-in. material, especially on inclined belts; proper application of various types of conveyor belts to reduce conveyor costs; efficient screening and sizing of damp cold slag, *i.e.*, slag holding 5 percent or more moisture; and dispersion of steam hindering the view of shovel operators in slag pits.

Other subjects discussed included controlled pouring of molten slag into pits by furnace companies, to produce best weights on crushed slag and to hold large lumps to the minimum; handling of skulls and large pieces ahead of feeder hoppers or pan conveyors; reduction of pit transportation costs; and the best methods to accomplish plant dust control. (The time available did not permit covering the entire range of scheduled subjects.)

Several suggestions were made for the improvement of the safety contest, including means to close the time gap between the announcement of the award winners and the presentation of the trophies to the winning companies. The Bureau of Mines will be requested to give individual employee certificates to all plants having injury-free records and meriting these certificates. At present, such employee certificates are issued only to the companies winning the trophies. In general, the N.S.A. undertaking for having this annual interplant safety contest conducted was given favorable recognition as accomplishing something worth while for the industry as a whole.

As a result of the discussions on several subjects — particularly those centering around gradation requirements of fines and quality control of slag by more efficient means of pouring into the pits—plans were made to hold a joint meeting of the operators and the N.S.A. technical committee in the near future, to co-ordinate the discussions.

It was agreed that future meetings should be held at the time and place

of the biennial equipment exposition scheduled in connection with the annual National Sand and Gravel Association and National Crushed Stone Association meetings. This would enable the operators to inspect to good advantage the equipment displays of these shows. Final arrangements for time and place will, however, be formalized with the approval of the N.S.A. directors.

James A. Carnathan, Birmingham Slag Company, chairman, appointed the nominating committee of the group, to consist of: William R. Moore, Cleveland Slag Division, Standard Slag Company, chairman; K. K. Kagarise, Standard Slag Company; L. L. Warren, Birmingham Slag Company; and Chester H. Mitz, Duquesne Slag Products Co.

This committee recommended the following members to act as officials of next year's meeting: Edward C. Levy Jr., Edward C. Levy Company, chairman; Gerald S. Snyder, Buffalo Slag Company, chairman, program committee, who is to be assisted by E. E. Miller, Standard Slag Company; W. F. Pierce, Buffalo Slag Company; L. L. Warren, Buffalo Slag Company; William H. Spooner, Bethlehem Slag Company; and F. E. Hayes, Duquesne Slag Products Co.

Miller, Gordenker Elected To Head Pumice Institute

The Pumice Institute elected the following officers for 1957 at its annual board of directors meeting in San Francisco, Calif.:

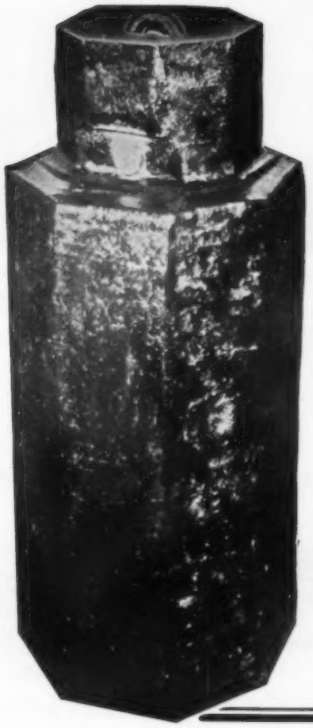
President, William E. Miller, The Central Oregon Pumice Co., Bend, Oreg.; vice-president, Rodney Gordenker, Thomas Pumice Company, Tionesta, Calif.; treasurer, R. W. Alley Jr., General Pumice Corporation, Santa Fe, N. M.; and secretary, Lloyd Williamson, Williamson Pumice Company, Bend, Oreg.

R. W. Alley is the retiring president. The Pumice Institute is a national association organized to promote the use of pumice products.

The Pumice Institute's program for 1957 includes an increase in advertising and promotional effort and a continuation of its extensive research program at the Research Foundation of the University of Toledo, Toledo, Ohio.

D. PAUL COOPER has retired from the post of vice-president and manager of the Lone Star Cement Company, New York Division, Albany, N. Y. He will be succeeded by L. R. PRITCHARD, former chief supervising chemist for the company.

"No. 1 ROCK BUSTER"



specially designed for **QUARRY OPERATIONS**

"Cape Ann" FORGED STEEL DROP BALL

- **RUGGED DESIGN**
- **GREATER IMPACT**
- **ECONOMICAL**

Used and approved by leading quarrymen everywhere, the "Cape Ann" Drop Ball is available in weights from 2000 to 12000 lbs.

It has a forged connecting link, protected by deep recess, for swivel or shackle. Strong alloy steel pin. Low cable replacements. Furnished complete as shown.

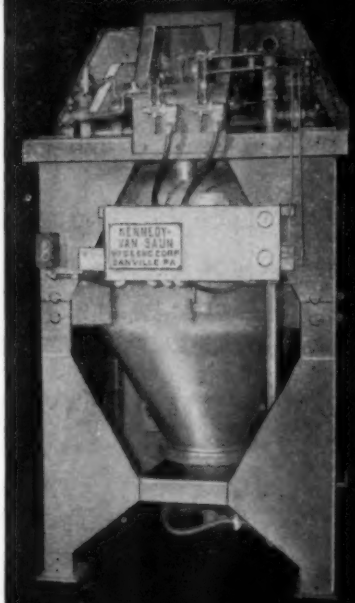
Write Today for full details

Cape Ann Anchor & Forge Co.

Gloucester • Massachusetts

the KENNEDY PNEUMATIC TRANSPORT SYSTEM... for

Pulverulent and Granular Materials utilizes the unique and exclusive advantages of the KENNEDY PNEUMATIC TRANSPORT PUMP.



- **NO MOTORS**
- **NO FEED SCREWS**
- **NO MOVING PARTS** while transporting material
- **BATCH CYCLE BY WEIGHT** can be used to check inventory
- **HIGHER PRESSURES** for greater efficiency
- **AIR** used only when transporting material.

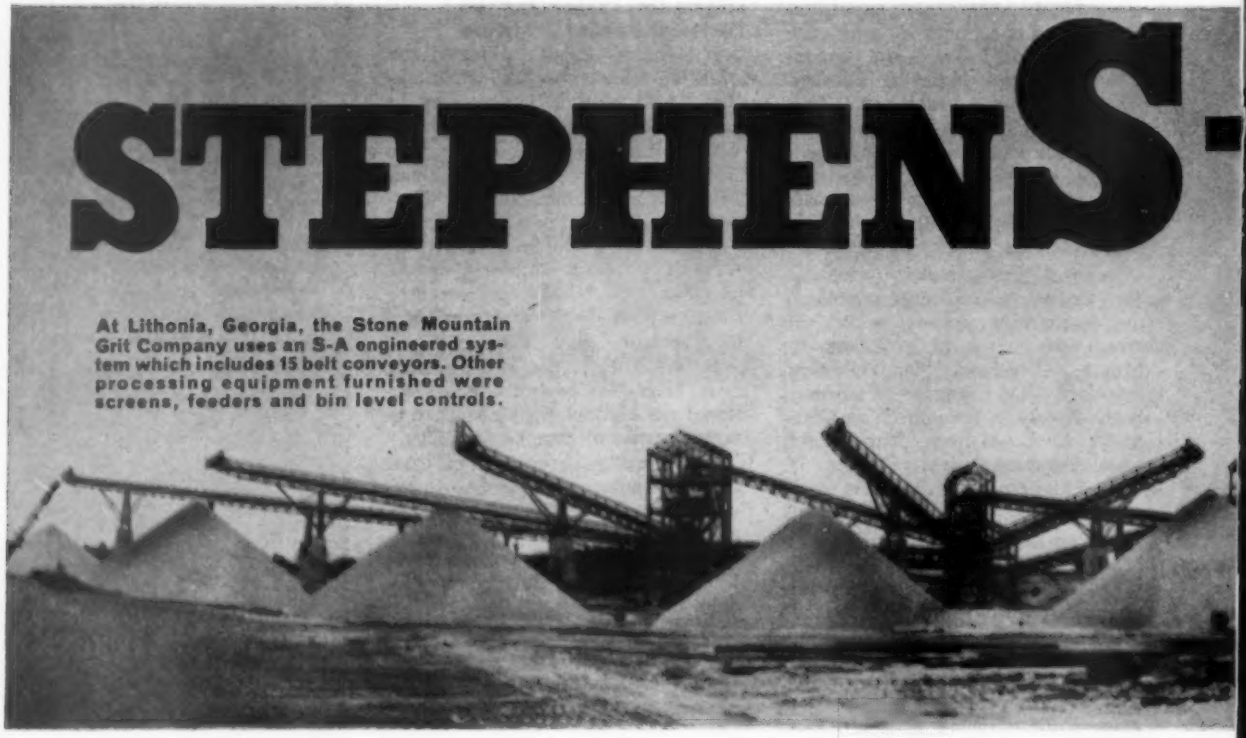
KENNEDY PNEUMATIC SYSTEMS used by the steel, rubber, pharmaceutical, chemical, cement lime, petroleum & many other industries.

Write for literature

KENNEDY-VAN SAUN MANUFACTURING & ENGINEERING CORP.

2 Park Avenue, N. Y. 16, N. Y.
Factory—Danville, Pa.

STEPHENS-



At Lithonia, Georgia, the Stone Mountain Grit Company uses an S-A engineered system which includes 15 belt conveyors. Other processing equipment furnished were screens, feeders and bin level controls.

LONG RUN ECONOMY IN ENGINEERED ROCK PRODUCT

Rock products are, by nature, low in cost per ton. They require handling and processing costs that are proportionately low. The material handling system that has been giving you adequate service may now require some analysis under the pressures of increased output and greater buyer resistance to your product costs.

To provide long run economy in every conveying-processing job, STEPHENS-ADAMSON engineers have devised the most effective line of screening, washing, stripping, reclaiming, and conveying equipment. Wise combinations of these standardized S-A products provide engineered systems that fit the need today with full allowances for future expansion of tonnage. They range from the smallest conveyor to a system delivering hundreds of tons per hour.

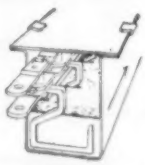
Expert advice is close to you through the S-A sales engineer in your area. Call him or write direct to any of our three manufacturing division offices.

This Amsco feeder has handled more than 65,000,000 tons of stone since 1930. Pans have been changed or reconditioned about three times. Built of tough manganese steel for heavy impact, long service, in short or long units.

S-A manufactures a wide range of material handling products in three complete

BELT CONVEYORS

VIBRATING CONVEYORS


REDLER
CONVEYORS, ELEVATORS

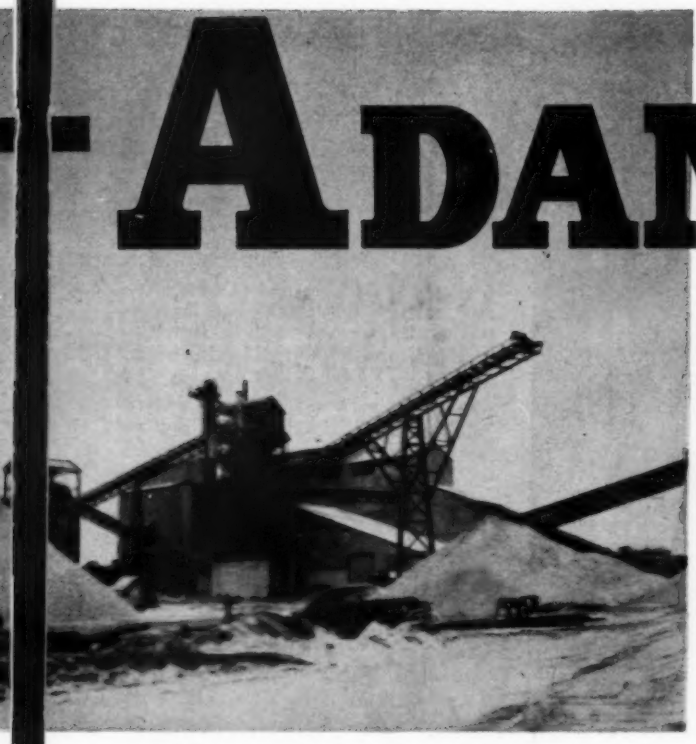
ZIPPER
CONVEYOR-ELEVATORS

PAN CONVEYORS

BUCKET
ELEVATORS

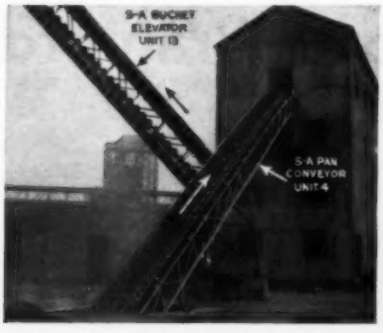
BELT CONVEYOR
TRIPPERS

-ADAMSON



30" 755-Series Carrier, to which an Extended Lubrication Kit has been added to permit all three lubrication fittings to be located on one side of conveyor.

CONVEYING SYSTEMS



A heavy bucket elevator and a pan conveyor unit handling gravel and stone. The bucket elevator using a deep bucket carries upward at a 45° angle. Pan conveyor fitted with armor fillers moves at a 20° slope.

A battery of heavy duty, single deck, "Vibrator" screens with suspension mounts, used in a stone plant for preliminary separation. S-A builds screens in many types and sizes for screening, scalping and washing.

390 foot belt conveyor elevates sand, gravel, and stone from a screening plant to gravity bins above automatic batch weighers. S-A builds belt conveyors in any length, and for capacities up to hundreds of tons per hour.

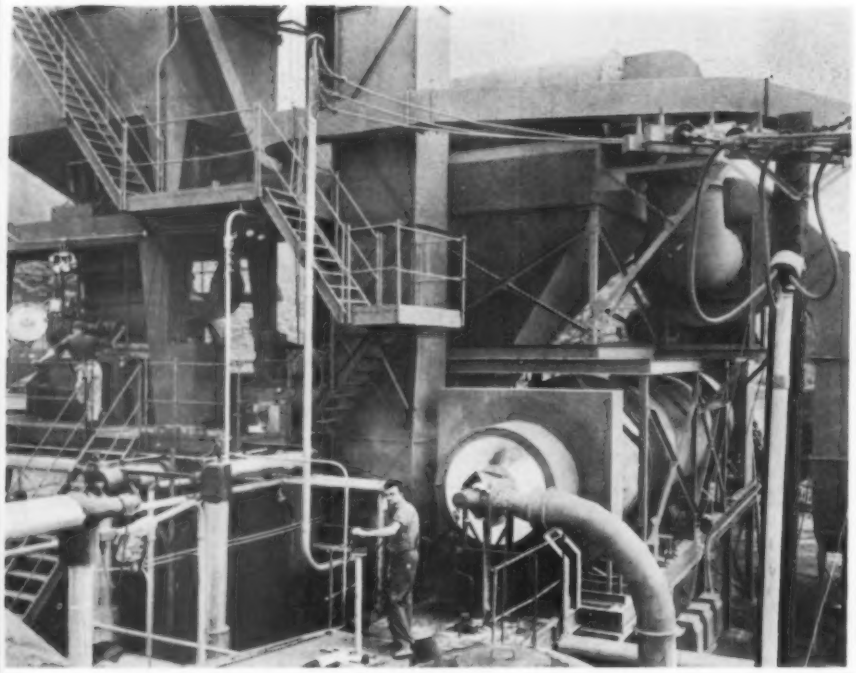
plants in U. S. and Canada

Belt Conveyors
Belt, Pan & Plate Feeders
Ship Loading Boom Conveyors
Stacking Conveyors
Storage & Reclaiming Systems
"Natural Frequency" Vibrating Conveyors
REDLER Conveyor-Elevators
ZIPPER Conveyor-Elevators
Conveyor Belt Cleaners
Headshaft Holdbacks
Grizzlies & Screens
Centrifugal Pilers
Bin Gates & Tunnel Gates
Car Pullers & Spotters
Bucket Elevators
Skip Hoists
SEALMASTER Ball Bearing Units

SINCE 1901 S-A STEPHENS-ADAMSON MFG. CO.

STEPHENS-ADAMSON MFG. CO.
20 RIDGEWAY AVENUE, AURORA, ILLINOIS
LOS ANGELES, CALIFORNIA
BELLEVILLE, ONTARIO

WRITE FOR A BULLETIN ON ANY OF THE ABOVE PRODUCTS



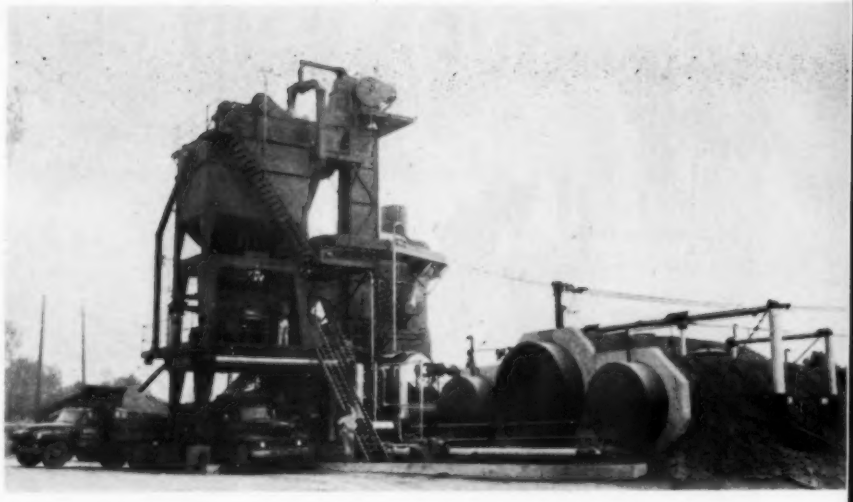
A closeup of the burner end of the asphalt plant at North Branford, showing the details of the dryer, combustion chamber, turbine, and hot elevator. The controls and product delivery are at the left.

NEW HAVEN TRAP ROCK Adds Asphalt Plant at North Branford

By ROY L. PECK

Because of the efficiency of the dust collection system, dust and smoke emission is held to the minimum.

From another approach, the visitor sees the earth cover placed over the asphalt storage tanks for insulating purposes.



Another ON THE SPOT Report

ON LAST August 1 the officials of the New Haven Trap Rock Company, New Haven, Conn., welcomed visitors to the opening of the sixth asphalt plant constructed for their firm during the last decade. The new unit more than doubles the capacity of the company's North Branford plant. The old 75-ton-per-hour capacity plant will be kept in readiness as a standby, should the new 3½-ton-per-minute capacity be taxed in meeting the demands of the new Connecticut turnpike construction.

The new installation—a Hetherington & Berner T-60 plant—is the last word in efficient production, having electrically-heated units on all asphalt and oil tanks and pipelines to obviate the use of steam in any form in the plant. Dust and smoke elimination is another feature which was necessarily incorporated in the design, as the plant is situated on route 80, 10 miles east of New Haven, in a populated area. As the accompanying pictures show, only a small amount of smoke or dust is noticeable, even when the plant is operating at full capacity.

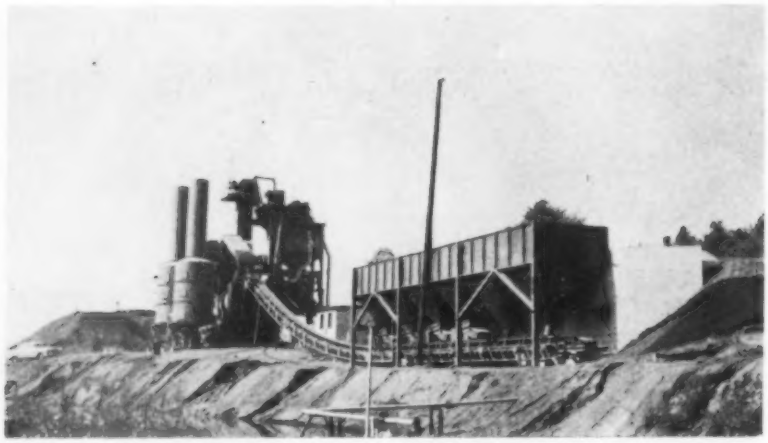
The North Branford quarry, with its mile-long working face, is one of three quarries; the others are at Plainville and Wallingford, Conn. This quarry is immediately adjacent to the asphalt plants, and graded trap rock aggregate is brought by truck from the production bins to the cold feed bins in a matter of minutes. There are six 30-ton bins holding ¾-in. and ½-in. aggregates, ⅜-in. stone, sand, and No. 1 and 2 screenings. The bins are equipped with four Syntron vibrating feeders and Cleveland Electric bin vibrators; and in addition manually-operated flow gates allow materials to pass by gravity to the conveyor below.

This conveyor is a 24-in. by 155-ft. Hewitt-Robins belt which carries the cold feed on a vertical 20-deg. curve upwards to the header above the dryer. It has a capacity of 250 t.p.h., and is driven by a 10-hp. motor. The 88-in. by 30-ft. dryer has individual trunnions driven by four 20-hp. motors through speed reducers. It is fired with Bunker C fuel oil through one No. 486 LP Hauck burner with a capacity of 810 g.p.h. This unit is installed in the combustion chamber, which is 54-in. ID and 66-in. OD by 48-in. long, and lined with Alamo firebrick. A 60-hp. Model 2060 Spencer turbine is used. The main exhauster on the dryer is an H. & B. No. 43 Type AA, with a No. 9 arrangement, and the main collector is an H. & B. No. 32.

Hot materials are elevated by a specially-built Link-Belt continuous bucket elevator of SS-1227 steel chain, with 20- by 8¾- by 11⅝-in. buckets set on 1-ft. centers, and driven by a 125-hp. gearmotor. It carries materials to the Model UF 3514 Deister Machine screen. The latter has two full decks and one three-quarter deck, carrying ½-, .218-, and .091-in. cloth, and it is powered by a 25-hp. motor.

The elevator discharges hot mate-

The quarry face at the North Branford operation is nearly a mile long and averages 92 ft. in height. The area which has been worked is about 70 acres.



Another view of the new asphalt plant shows the bins for incoming aggregates, the feeders, and the belt conveyor to the plant.

rials into any compartment of a four-compartment bin of 80-ton total capacity for aggregates and one 3-ton filler bin. The sizes of hot materials offered are ¾, ½, ⅜, and ¼ in. A 10-ton excess mineral filler bin is served by an elevator having 8- by 5-in. buckets on an 8-in. belt, driven by a 5-hp. gearmotor.

Beneath the bins is a 3½-ton weight-box, equipped with a 4- by 6-in. H. & B. Fluidometer for asphalt control. Material goes into an S-60 pugmill mixer in 3½-ton batches (capacity per minute), the mixer being driven by a 100-hp. gearmotor. All controls here are air-operated, using Automatic Electric cycle units.

Other appurtenant equipment includes the following: a Quincy Model 390 compressor, driven by a 10-hp. motor; an H. & B. fugitive dust exhauster No. 19 Type AA driven by a 15-hp. motor; two 4-in. Model ZMSJV Viking asphalt pumps with H. & B. pressure relief valves, driven by 20-hp. motors; two 10-ft. diameter H. & B. hydraulic washer-type scrubbers, size No. 210, having a capacity of 38,000 c.f.m.; and a water pump, Deming Figure 4033, size 3A. The capacity of the water pump at the scrubbers is 190 g.p.m. at 40 s.p.i.; a 15-hp. motor furnishes power. Pugmills and pumps are jacketed with oil heat-transfer units, and the oil is heated electrically.

Asphalt and cut-back are stored in one 20,000-gal. tank and two 10,000-gal. steel tanks. All tanks and the lines leading into them are heated electrically. As shown in the accompanying photographs, these tanks are covered with stone screenings for their entire length, and insulation has been applied to the ends of the tanks. Separate pipelines are maintained for both paving asphalt and cut-back through the Fluidometer.

Electric heating of tanks and lines presents interesting figures as to total power required for this type of heating. The hot oil system requires 20 kw.; the 12,500-gal. Bunker C tank, 16 kw.; the booster heater for this tank, 60 kw.; the 20,000-gal. asphalt tank, 54 kw.; each of the remaining two 10,000-gal. tanks takes 40 kw.; and the asphalt pipelines, 12.5 kw.—for a total of 241.5 kw. A total of 525 hp. is required to operate the remainder.

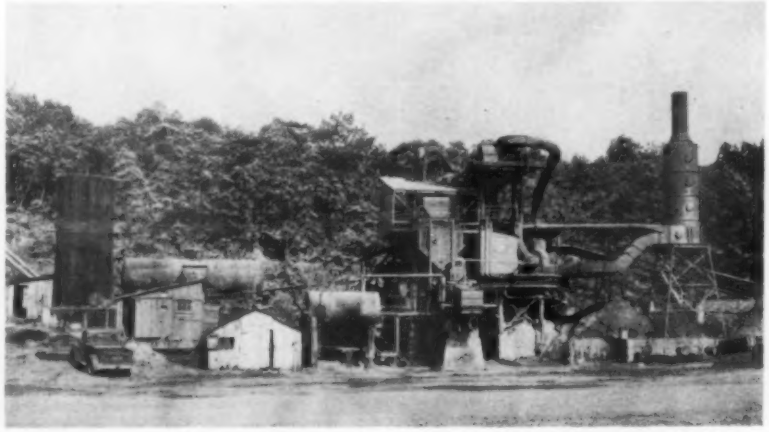
To furnish the required electrical energy, there is a main transformer bank of three 333 kv.-a 13,200/400 transformers. The power and lighting circuits are reduced by three 25 kv.-a. 440/220/110 transformers. The plant switch is rated at 800 amp., and the auxiliary circuit breaker at 400 amp.

For the construction of the retaining wall at the cold feed bins, 251 cu. yd. of concrete and 15 tons of reinforcing steel were used; and for the plant footing and piers, asphalt tank supports, and transformer stations, 245 cu. yd. of concrete and 13 tons of reinforcing steel were required. The bins called for 18½ tons of reinforcing steel and plates. The weight of the plant, as received on cars (ready for installation) was 128 tons, and in addition the conveyor weighed 3½ tons.

Asphalt products are shipped normally within a radius of 30 miles from the plant. A recent shipment to Darien, Conn., 45 miles away, is the maximum to date. It is expected that this shipping radius will be extended as products go to the various points on the new section of the Connecticut turnpike now under construction.

Company officials include Ray J. Reigeluth, chairman of the board of directors; A. L. Worthen, president and general manager; Edward T. Perry and T. W. Jones, vice-presidents; and Robert S. Reigeluth, treasurer. Robert D. Brewer is superintendent at the North Branford plant; Hollis Haynes, plant foreman; Calvin Brown, materials engineer; and Charles Hutton, chief engineer.

Canada Cement Company Limited, Toronto, Ont., reported net earnings of $7,257,014 for the year ended November 30, 1956, against $7,591,877 in the preceding year. Earnings were equal after preferred dividends, to $2.62 per common share in 1956, against $2.76 in 1955. and $2.14 in 1954. Dividend payments on the common in each year amounted to $1 per share.



The old 75-t.p.h. capacity asphalt plant will be kept in reserve to meet peak demands.

as modern as they come...

DESIGNED AND EQUIPPED BY TELSMITH

New Plant of L. Romano Construction Co., East Providence, Rhode Island, processes 200 tons per hour of washed aggregate—sand, and 3 sizes of gravel all under 1½″ and stockpiled. Telsmith designed the plant, and built the machinery. Send for Telsmith Complete Plant Service Bulletin 278.

Crushing Plant (*above*)—Plus 4″ gravel goes to a 18″ x 32″ Telsmith Jaw; plus 1½″ gravel to a 36-S Gyrasphere Crusher; the scalper is a 4′ x 12′ Telsmith 2-deck Vibro-King. **Washing Plant** (*right*) has a 72″ Telsmith Super-Scrubber; two 4′ x 12′ Telsmith 2-deck Vibro-King rinsing-sizing screens; 24″ x 20′ Telsmith Twin Screw Sand Classifier.

Many Features of Modern Design— In this plant both Telsmith Crushers are high capacity, low maintenance machines. The large-capacity Telsmith sizing screens have spray bars on every deck. The extra heavy-duty Telsmith Super-Scrubber takes out the clay as well as soft stone, assuring top quality aggregate always. Send for Telsmith Bulletin 266.

G-26

SMITH ENGINEERING WORKS

504 E. CAPITOL DRIVE **MILWAUKEE 1, WISCONSIN**

Representatives in Principal Cities in All Parts of the World • **Cable Address: Songworks, Milwaukee**

Review and Forecast Of the Canadian Cement Industry

Production, shipments set new records

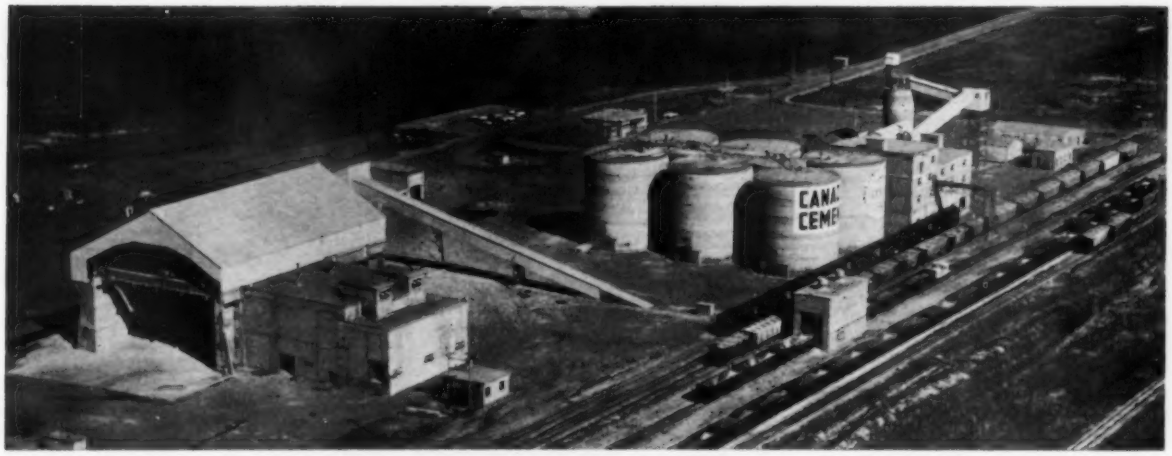
By **WALTER E. TRAUFFER**

THE Canadian portland cement industry in 1956 apparently set all-time records in both production and shipments and seems certain to reach even higher levels in 1957. New plant and plant expansion programs completed during the last year were more than adequate to take care of the increased demand, and the very considerable new capacity scheduled for completion in 1957 seems certain to insure cement users against any shortage in Canada for several years to come.

Official government figures are available only for the first 11 months of 1956, but these are far ahead of the same period last year. Production in November, 1956, was 2,562,943 bbl. (Canadian 350 lb.), as compared to 2,220,568 bbl. in November, 1955. Shipments in November, 1956, were 2,287,424 bbl., compared to 2,010,934 bbl. in November, 1955.

Shipments in 1956 up to the end of November (11 months) were 27,764,274 bbl., compared to 24,219,260 bbl. for the same period of 1955, an increase of 14 percent. Production for 1956 up to the end of November (11 months) was 27,443,872 bbl., compared to 23,598,239 bbl. for 11 months of 1955. Based on these figures, it is officially estimated that Canadian production for all of 1956 will be 29,719,377 bbl., compared to 25,168,464 bbl. in 1955. Value of production in 1956 is estimated at $77,876,046 (Canadian), compared to $65,650,025 in 1955. These are increases of 18 percent, in each case. Stocks at plants and warehouses at the end of November were 609,861

This aerial view shows the new one-kiln plant of the Canada Cement Co. at Woodstock, Ont., which went into operation in September, 1956. The second kiln, with related equipment, which will double its capacity early in 1957, is being installed.



The new 6,000-bbl. grinding plant of the Canada Cement Co. at Edmonton, Alta. This receives clinker from the Exshaw, Alta., plant.

bbl. in 1956 and 470,313 bbl. in 1955.

Exports apparently were down considerably for the year. Through November, 1956, the total exported was 710,295 bbl., compared to 956,044 bbl. for 11 months of 1955. Imports are known only through September, 1956, but these are up sharply—2,858,585 bbl., compared to the 9-month total of 1,708,608 bbl. in 1955.

The capacity of the cement industry was increased in 1956 by the construction of five new plants and major expansion programs at several others. The new plants include the following: Canada Cement Co., Edmonton, Alta. (clinker grinding only), and Woodstock, Ont.; Inland Cement Co., Ltd., Edmonton, Alta.; Saskatchewan Cement Corp., Ltd., Regina, Sask.; St. Lawrence Cement Co., Clarkson, Ont. These five new plants added about 7,500,000 bbl. to the capacity of the industry. Expansion programs at other plants added at least 2,000,000 bbl. of new capacity.

The increase in capacity in 1957 apparently will be somewhat less. Two new plants to be completed—those of Lafarge Cement of North America Ltd. at Lulu Island, B. C., and Lake Ontario Portland Cement Co., at Picton, Ont.—will add about 3,000,000 bbl. of capacity. Expansion programs known at this time involve the plants of the British Columbia Cement Co., Bamberton, B. C., the Canada Cement Co., Havelock, N. B., and the doubling of capacity at St. Lawrence's Clarkson, Ont., plant, which was new in 1956. These three programs alone will add 4,600,000 bbl. to the capacity of the industry.

There are unconfirmed rumors of other new plants to be built. It was reported late in 1956 that the Ideal Cement Co. of Denver, Colo., plans to incorporate a Canadian subsidiary with headquarters at Vancouver, B. C. The new company, to be known as the Ideal Cement Company Ltd., will be a wholly-owned subsidiary. This move was to be made in anticipation of activating Ideal's quarry holdings and the industrial site acquired in 1954.

Most producers in Canada report that business conditions in 1956 were excellent and that prospects for 1957 are good. According to an eastern Canada producer: "The cement industry in Canada has been extremely busy throughout 1956. In the East such non-recurring construction jobs as the St. Lawrence Seaway and Hydro-Electric development has created a very large demand for cement in eastern Canada. Continuing western growth has also called for large quantities of cement."

A western producer said: "1956 was by far our largest year in history, and cement consumption in this province rose to an all-time high of approximately 3,000,000 bbl., which, when placed alongside the population of British Columbia of 1,400,000, is about 2 bbl. per head. The year 1955 saw consumption of approximately 2,000,000 bbl.; so the increase in 1956 was quite unprecedented, and there was a shortage of

The new 5,000-bbl.-per-day kiln installed in 1956 at the Montreal East, Que., plant increased its capacity to 20,000 bbl. daily.

about 300,000 bbl. of cement, which was made up by importations from the state of Washington. Production was not handicapped in any way, and our company will produce about 2,300,000 bbl. for the year 1956, and by this time next year should be operating on a 3,000,000-bbl. basis."

"In Canada we have not got a large highway program; however, building is at an all-time high, and the cement industry is already greatly expanded. I think it is about at its peak, and present favorable conditions should continue for some time. Any change would be a slight slackening off, which would not be serious."

Another eastern producer dissented: "We think there is too much cement available on the market in Canada and United States."

Opinions on prospects for 1957 and later, follow. According to a western producer: "The future for the cement industry in western Canada continues to look very bright. The rapidly expanding industrial picture, anticipated general growth, and the tremendous potential as a result of the oil and gas and related industries all indicate continued prosperity in the construction field."

"It is anticipated that cement consumers in western Canada will find the supply situation greatly improved during 1957, the available output being about 2,000,000 bbl. greater than in 1956. . . ."

One producer in eastern Canada says: "The expansion program carried out by the Canadian cement industry in 1956 is most remarkable and should lead to a complete elimination of cement shortage in Canada for years to come. We even expect that supply in some areas might exceed demand in 1957. We are of the opinion that imports of cement into Canada will practically be eliminated in 1957. However, we believe that the additional capacity installed by the Canadian cement industry in 1956 should be fully used in the near future, the fast expanding construction industry providing an excellent market."

A major producer, looking further into the future, states: "When the St. Lawrence Seaway is completed in two years, it will be possible for foreign importation of cement to be made by water right to the geographical heart of Canada. This competition, with low transportation costs, low labor manufacturing costs, and government subsidies for these foreign producers, might well cause anxiety for the cement industry. Any temporary business slow-down due to any other cause outside the borders of Canada might also very rapidly result in an oversupply of cement in this country."

According to an eastern producer: "The most important trends in our industry in 1956 are the continuing unprecedented expansions of cement manufacturing facilities, record high cement production, and some isolated and temporary cement shortages. These spasmodic shortages of cement have been taken care of by the importation of a limited quantity of European cement."

Another eastern producer reports that there is an increasing trend toward bulk cement which is expected to continue in 1957. Prices have been the same as in 1955, and little change is expected in 1957. Production cost increased about 7 percent in 1956, and cost of coal and labor are up about 10 percent, and power is 3 percent higher than in 1955.

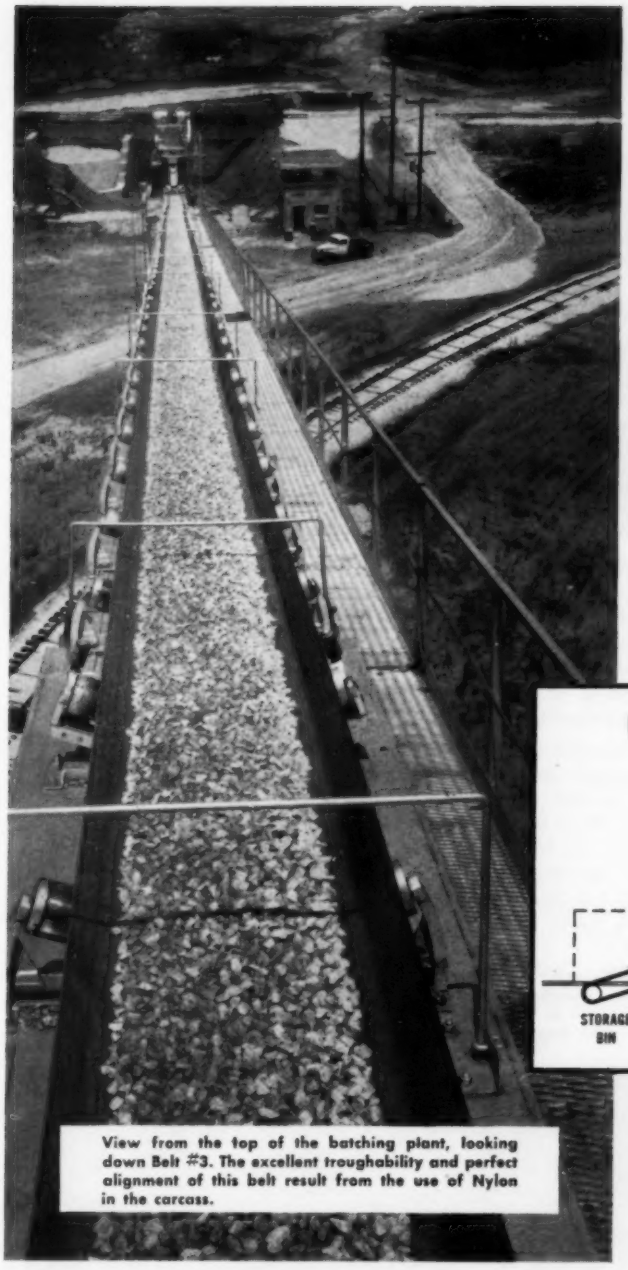
The industry apparently had few serious problems in 1956 and expects none in 1957, except that of meeting the increasing demand.

British Columbia The British Columbia Cement Co., Ltd., Bamberton, B. C., a subsidiary of Associated Portland Cement Manufacturers of London, England, is carrying on the 2½-year expansion program announced late in 1955. In 1956 a new 1500-hp. raw mill was installed, and excavation was begun late in the year for a new 350-ft. Vickers-Armstrong kiln. When the plant is in operation about July, 1957, this will raise the plant's present 2,300,000-bbl. capacity to 3,000,000 bbl. or more.

Canada Cement The Canada Cement Co. in 1956 completed a new 6,000-bbl.-per-day clinker grinding plant at Edmonton, Alta. This receives clinker from the Exshaw, Alberta, plant; but it is so designed that it can eventually become a complete cement plant.

A new 12- by 450-ft. Traylor kiln

An aerial view of Inland Cement Company Limited's plant at Edmonton, Alta. The clay pit can be seen in the background. In the center is the excavation for six more silos scheduled to be finished by fall.

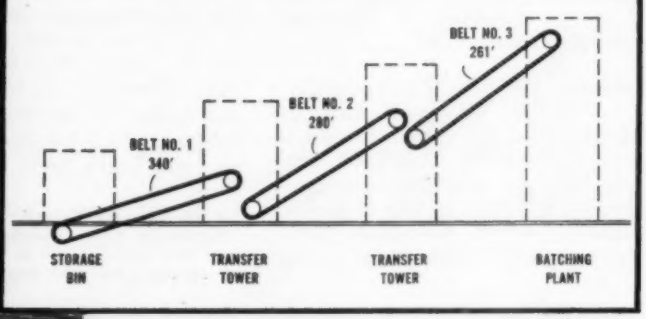


View from the top of the batching plant, looking down Belt #3. The excellent troughability and perfect alignment of this belt result from the use of Nylon in the carcass.

US RUBBER CONVEYOR BELTS

Push-Button Control and U. S. Conveyor Belts help turn out 120 cu. yds. of concrete per hour

FLOW CHART OF CONVEYOR BELT SYSTEM.



"This is the largest concrete plant* of its type in the world," says the plant's manager. "In aiming to turn out the best concrete at the lowest possible cost we require a highly mechanized operation."

And that's what this plant has. Almost 2,000 feet of U. S. Rubber's 30" wide U. S. Matchless patented Style XN conveyor belting carries raw materials through the reclaiming tunnel, then up a steep grade to a turn head—electrically controlled—and finally discharges the cargo into the always-hungry jaws of the huge batching plant.

One man in a control tower oversees the entire operation, from storage pits to plant bins. The control board tells him when a bin is getting low. By pressing a button he can start one of the three U. S. Belts hauling sand, stone, or other aggregates to the proper bin. "We expect many years' service from these belts," adds the plant's president, J. Roy "Cap'n" Pennell.

This is another good example of U. S. Rubber's Three-Way Engineering, in which "U. S." engineers work as a team with the plant engineers and the conveyor system engineers . . . to obtain the *right* belt for the job. This type of assistance, plus a complete line of conveyor belting, can be obtained at any of our 28 District Sales Offices, or contact us at Rockefeller Center, New York 20, New York.

In Canada, Dominion Rubber Co., Ltd.

*Greenville Concrete Co., Greenville, S. C.

US RUBBER Mechanical Goods Division **United States Rubber**

Excavation under way at the dock of the new Lake Ontario Portland Cement Co. plant at Picton, Ont., which is scheduled for completion late in 1957.

in April, 1956, increased the capacity of the Montreal East plant 5,000 bbl. to a total of over 20,000 bbl. daily. A modern new finish mill being installed will help to balance the clinker production.

The company's new $10,000,000 plant at Woodstock, Ont., went into operation in September, 1956, with one F. L. Smidth kiln; capacity is 1,500,000 bbl. annually. A second kiln now being installed in this plant will double the capacity early in 1957.

Plans have been announced to double the present 800,000 bbl.-capacity of the plant at Havelock, N. B., by the addition of a new kiln. No date for completion has been given.

There is an unverified rumor that the company is considering the construction of a cement plant near Nordegg, Alta.

Ciment Quebec Ciment Quebec, Inc., St.-Basile, Que., reports no expansions in 1956 and none planned for 1957.

Inland The Inland Cement Co., Ltd., Edmonton, Alta., in March, 1956, put into operation a new 1,000,000-bbl. $8,000,000 wet-process cement plant. Before production began, it was decided to double capacity, and in November, 1956, the completed 2,000,000-bbl. plant was in operation. Total cost of this plant was $12,000,000. Equipment includes two 11- by 340-ft. Allis-Chalmers kilns. Future plans call for the production of oil-well and sulphate-resistant cements.

This plant is owned by Sogemines Ltd. of Montreal, Que., formed to finance industrial and mining projects in Canada. It is backed financially by a group of Belgian industries headed by Societe Generale de Belgique, which has interests in Belgian and Dutch firms.

The St. Lawrence Cement Company's new 1,500,000-bbl. plant at Clarkson, Ont., which went into operation late in 1956. Doubling of capacity is now under way.

Lafarge Early in 1956 the Societe Anonyme des Chaux et Ciments de Lafarge et du Teil, an international cement manufacturing firm of Paris, France, formed Lafarge Cement of North America Ltd., to build a $13,000,000 cement plant at Lulu Island, near Vancouver, B. C.

Work was begun during the summer, and completion of this 1,500,000-bbl. plant is expected late in 1957. Limestone will be shipped from Texada Island. It is expected that upwards of 300,000 tons a year will be shipped in a 3,000-ton self-unloading barge now being built.

(*Continued on page* 160)

Modern Heavy-Duty Diesels

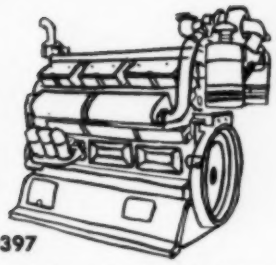
From a quarter century of diesel leadership, now comes the world's most advanced line of diesel engines

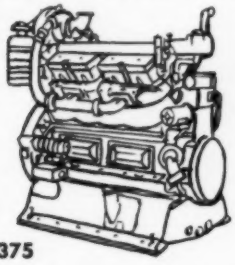
Designed and developed by Caterpillar research, these compact units pack more power in less space and deliver greater efficiency, greater economy and longer life in any application. And they're all ruggedly built for *hard work*.

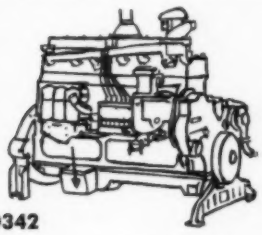
To meet your requirements, Caterpillar's modern power line is available in industrial engines, torque converter power units, spark-ignition engines, welders and electric sets up to 650 HP (maximum output capacity) and 350 KW. Also available is a complete line of marine engines up to 500 HP (continuous duty).

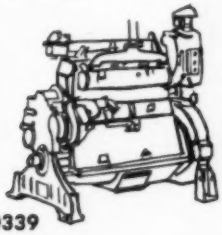
You have your choice of hundreds of variations. All units incorporate the latest advances in modern heavy-duty design. They're available as original or replacement power for excavators, cranes, ditchers, asphalt plants, crushers, compressors, welders, electric sets, pumps, drill rigs, sawmills and other equipment.

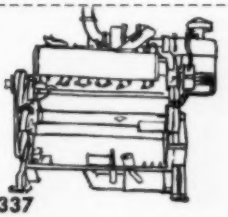
See the following pages for a summary of this rugged, modern power line. For complete information, see your Caterpillar Dealer!

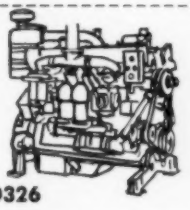

D397

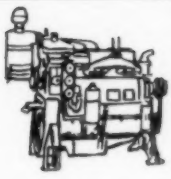

D375


D342


D339


D337

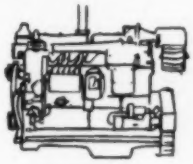

D326


D311

D315

D318

D315
(Series G)


D318
(Series G)

MODERN HEAVY-DUTY CATERPILLAR DIESELS

for Excavators, Cranes, Ditchers, Asphalt Plants, Crushers, Compressors, Welders, Electric Sets, Pumps, Drill Rigs, Sawmills and other equipment

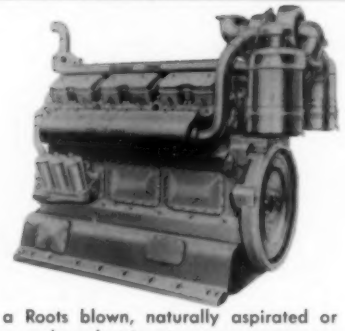
What modern heavy-duty diesels are

Compared with the heavy-duty diesels of the past, modern heavy-duty Caterpillar Diesels are compact and sturdy. They're the latest results of Caterpillar research to increase production and lower operating costs in your equipment. Manufactured by modern techniques from modern materials, they save space, fuel and maintenance time in any application. Bulk has been eliminated. Power and longer life have been added by superior design and metallurgy.

Why they do a better job than ever

Caterpillar's modern heavy-duty diesels feature the four-cycle design which provides a smooth, long, effective power stroke and a more efficient utilization of power. They require practically no attention. Their fuel system requires no adjustment. There are no cylinder ports to clean. And Caterpillar's single-orifice fuel injection valves combined with the precombustion chambers permit use of a wide range of fuels including premium diesel fuels as well as low-cost No. 2 furnace oil. All these and other features add up to new performance standards in diesel power!

For complete information about modern heavy-duty diesels, see your Caterpillar Dealer

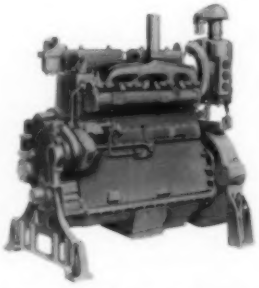


D397

with Turbocharger

650 HP*

Also available as a Roots blown, naturally aspirated or spark-ignition engine, and as electric set or torque converter power unit. Choice of air, electric or gasoline starting system.

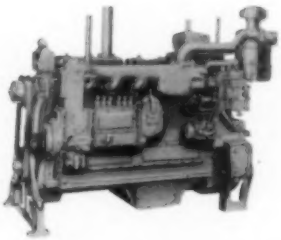


D339

Naturally Aspirated

140 HP*

Choice of air, electric or gasoline starting system.



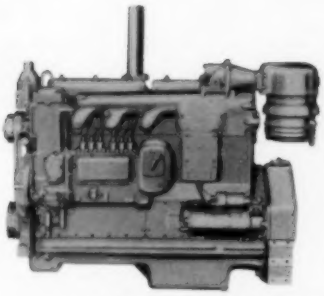
D318

Naturally Aspirated

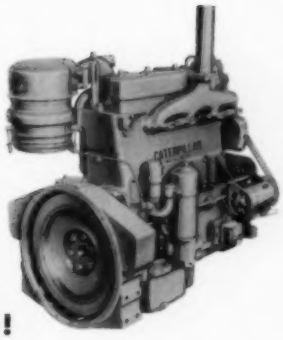
137 HP*

Also available as an electric set or torque converter power unit. Choice of air, electric or gasoline starting system.

NEW D318
(Series G)
Turbocharged
175 HP*



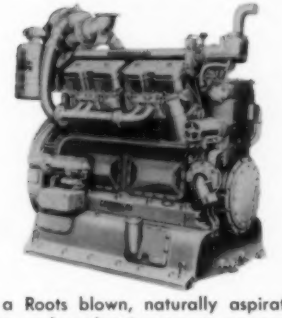
NEW D315
(Series G)
Turbocharged
115 HP*



SMALLER, LIGHTER AND LOWER PRICED!

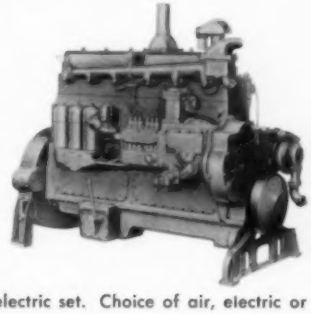
Keeping in line with Caterpillar's continued diesel leadership are these new Series G engines. They are designed for use in installations where space is at a premium. Both are small, light and low-priced; yet they deliver dependable power with the renowned Caterpillar durability. Also available naturally aspirated (shown above). Choice of air or electric starting system.

D375
with Turbocharger
430 HP*



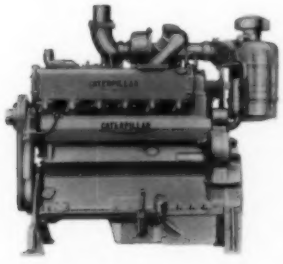
Also available as a Roots blown, naturally aspirated or spark-ignition engine, and as electric set or torque converter power unit. Choice of air, electric or gasoline starting system.

D342
Naturally Aspirated
210 HP*



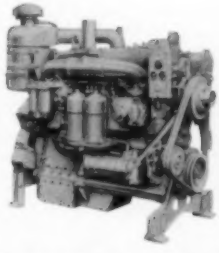
Also available as an electric set. Choice of air, electric or gasoline starting system.

D337
with Turbocharger
310 HP*



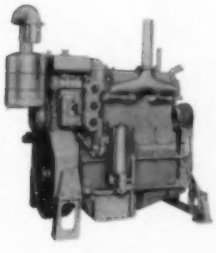
Also available as an electric set or torque converter power unit. Choice of air, electric or gasoline starting system.

D326
Naturally Aspirated
200 HP*



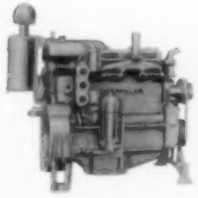
Also available as an electric set or torque converter power unit. Choice of air, electric or gasoline starting system.

D315
Naturally Aspirated
91 HP*



Also available as an electric set or torque converter power unit. Choice of air, electric or gasoline starting system.

D311
Naturally Aspirated
65 HP*



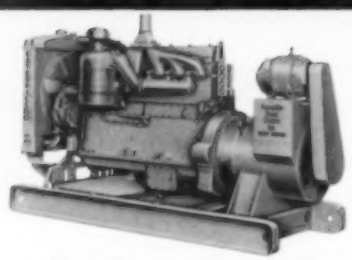
Also available as an electric set. Choice of air, electric or gasoline starting system.

*Maximum output capacity

Modern heavy-duty CAT* Diesels

ELECTRIC SETS

Dependable electric power, featuring the new Cat Generator, available in standard voltages, 60-cycle in the following KW sizes: 30, 40, 60, 100, 150, 165, 200, 225, 250, 315, 350. Also available as 50-cycle and D.C. units.



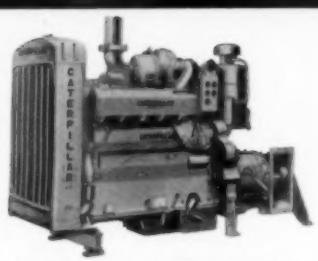
The new Caterpillar Generator brings you the best features of self-regulated and externally-regulated generators in one compact package. It means more for your money. While Caterpillar is prepared to supply you with almost any kind of generator you specify, your best buy is the Cat self-regulated Generator.

Advantages of the new Cat Generator

1. Designed to match exactly the Cat Engine powering it. **2.** Regulator with no moving parts provides steady, self-regulated voltage, no load to full load. **3.** No adjustments necessary after installation. **4.** Easily installed, no complicated switchgear or external voltage regulators are needed. **5.** Easily synchronized with other generators now in use. **6.** Big electrically, handles surge of heavy loads; rugged and easy to maintain; small and compact.

TORQUE CONVERTER POWER UNITS

Many different arrangements are available for each of six Cat Engines to provide you with a greater selection of power packages.



Wide choice of power units: Engine and torque converter; engine, clutch and torque converter; engine, clutch, torque converter and reverse gear.

Wide choice of output shafts: Standard heavy-duty drive for side loads; narrow chain housing for side loads; wide chain housing for side loads; output shaft for in-line loads only.

Advantages of Cat Torque Converter Power Units

1. Torque output is automatically matched to load. **2.** Loads start smoothly. **3.** Load movement can be controlled without using clutch. **4.** Overloads cannot stall engine. **5.** Need no special hydraulic oil — their fluid is engine fuel — fluid level automatically maintained. **6.** Cat Diesel Engine burns a wide variety of fuel oils cleanly and efficiently, even when idling.

Specify modern power—Caterpillar power!

On this page—and the three preceding pages—you've seen a summary of Caterpillar's modern heavy-duty engines. Either as original or replacement power, there's one among the hundreds of different arrangements that exactly meets your needs. Leading manufacturers of machinery can supply these models in the equipment they build. For complete details about them, see your Caterpillar Dealer. He backs you with prompt service. He has the experience and technical knowledge to help you with your power problems!

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

HUNDREDS OF DIFFERENT UNITS TO MEET YOUR POWER NEEDS

WANTED— THE HARD WORK

PRINTED IN U. S. A.

N.C.S.A. Convention

(*From page* 93)

on the quarry efficiency figure were said to be the material, services, and power consumption.

Stone Storage Measurement In opening a discussion on practical methods for totalling annual production tonnage, Nelson Severinghaus, vice-president and general manager, Consolidated Quarries Corp., Decatur, Ga., emphasized that an accurate tonnage figure is necessary in utilizing the efficiency formula previously described by Mr. Cooke.

It was suggested that this could be achieved by adding up yearly shipments and adjusting the resultant total for loss or gain in stockpiles. Taking cognizance of the fact that such piles have varying shapes, Mr. Severinghaus stated that they could be measured and volumes computed with the formulas for volume of a cone, block, wedge, or a combination of these.

In a discussion period following the above two papers, questions were raised with respect to the tonnage and man-hour factors in the efficiency figure formula. In reply, it was indicated that the tonnage represents the total net tons from the primary crusher, and that the man-hours would include those of the following crews: stripping, drilling, secondary breaking, loading, crushing and screening, stockpiling, final loading, and weighing. With respect to differing weights of various types of stone, it was noted that the weight per cubic foot should be established on each.

Scalping *Advantages and Disadvantages of Scalping between the Primary and Secondary Reduction Crushers* was the subject of a discussion by E. Lee Heidenreich Jr., Newburgh, N. Y. Referring first to possible disadvantages, Mr. Heidenreich indicated that there were such if there were no market locally for the fine materials removed.

With respect to favorable angles, it was noted that not only does a scalper between the primary and secondary crushers reduce the load on the latter, but it also serves to clean the feed to the secondary of clay, dirt, and other undesirable materials. It was noted that if these were not removed, the secondary crusher could pack during wet weather. Further, the speaker stated, such removal is mandatory for plants not using washing equipment in order to provide a clean product.

With respect to operating details, it was pointed out that the scalpers ahead of the secondary crusher should be oversize, *i.e.*, with a capacity in excess of the amount of fines in any truckload of material delivered from the quarry. Further, it was stated that they should be double-deck units, on which the upper would act as a guard deck. Installation design, it was noted, should incorporate provision for disposal of fines, as well as for bypassing of the scalper in allowing feed directly to the secondary crusher.

Stating that the type of primary crusher and its setting determine the amount of minus ¾-in. material in the feed to a following scalper, Mr. Heidenreich indicated that this is usually about 10 percent, and would represent a substantial loss from total production if no local market such as for road base materials is available. However, the speaker noted, about 65 percent of the material retained on the scalper's bottom deck will qualify as roadstone for which a market is generally available.

In conclusion, it was indicated that the advantages of a scalper between the primary and secondary crushers outweigh the disadvantages. Incorporation of this unit, it was summarized, would raise the capacity of the secondary crusher, as well as provide for the production of clean stone at all times.

Quality Control The second half of the special operating session was a discussion by a five-man panel of producers on the theme of quality, introduced by Joseph E. Gray, N.C.S.A. engineering director. It was felt in scheduling this feature of the program that along with the tremendous increase in the demand for aggregate created by the expanded highway program will come the need for constant vigilance on the part of quarry operators to maintain the required high standards of quality. Each of the speakers has wide practical experience in the five basic quarry operations involved.

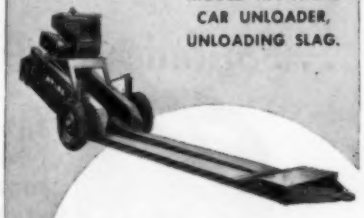
Gray's Introduction In his introduction to this discussion, Mr. Gray pointed out that in this highway program there will be many inspectors of varied experience; so every producer must not only watch the quality of his product, but also see that fair tests are made. Every operator must be familiar with all methods of quality control and should keep a record of all tests, so that production methods can be adjusted whenever necessary. Mr. Gray mentioned flat and elon-

Greater Loading and Unloading Capacity with

ATLAS

CONVEYING AND LOADING EQUIPMENT

MODEL 124 ATLAS CAR UNLOADER, UNLOADING SLAG.



Atlas Car Unloaders are giants for performance! They have earned a reputation throughout the country for efficient and reliable material handling operations with exceptionally low operating and maintenance costs.

Please send me your bulletin on the Model 124 Atlas Car Unloader.

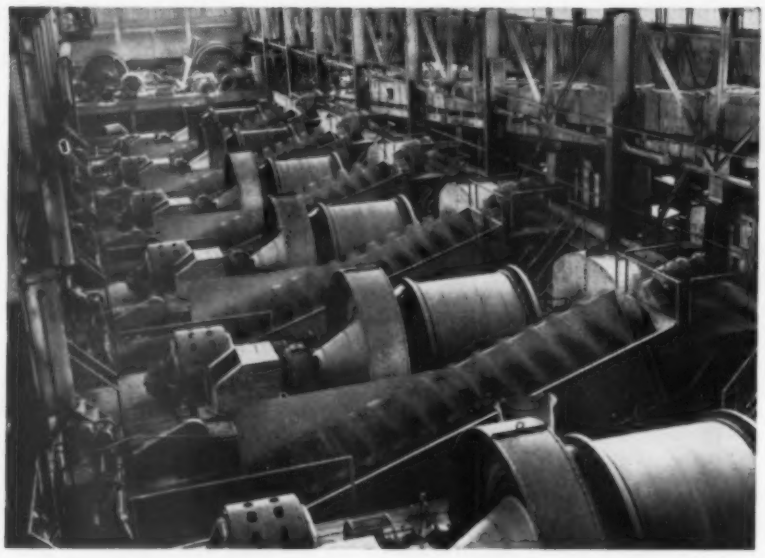
Name .....

Company .....

City ..... State .....

ATLAS CONVEYOR CO.,
CLINTONVILLE, WIS.

CALUMET
NI-HARD* GRINDING BALLS



. . . Stand the Day-After-Day Grind

In wet or dry grinding, Calumet Ni-Hard grinding balls offer maximum wear resistance. For instance, in exhaustive tests made in wet grinding of copper ore, they offered 75% greater wear-resistance than any other type of ball. For dry grinding, the wear life proved to be 4 to 1 better than that of forged steel balls.

Calumet Ni-Hard grinding balls have been thoroughly job-tested not only in Calumet and Hecla operations but in the mills of a number of other leading concerns throughout the country. The results invariably have been shown in greater efficiency and lower costs—benefits that can also be yours once you have used Calumet Ni-Hard grinding balls in your own mills.

A complete range of sizes is available to you: 5/8", 3/4", 7/8", 1", 1 1/4", 1 1/2" and 2". Let us send you complete information. Write TODAY.

**Reg. U.S. Pat. Off., Intl. Nickel Co., Inc.*

CALUMET & HECLA, INC.
CALUMET DIVISION
WOLVERINE TUBE DIVISION
FOREST INDUSTRIES DIVISION
GOODMAN LUMBER COMPANY
CALUMET & HECLA OF CANADA LIMITED
CANADA VULCANIZER AND EQUIPMENT COMPANY LIMITED

CALUMET DIVISION
of Calumet & Hecla, Inc.
1 CALUMET AVENUE • CALUMET, MICHIGAN

gated pieces as an example. A list of tests should be kept, together with an average and variations from the average. A chart will clearly show any unusual variations which might be the result of a bad test.

Stripping for Quality In *Stripping for Quality* John Bratton Jr., general manager, Superior Stone Co., Raleigh, N. C., pointed out that test drilling does not always indicate the true stripping problem which will become evident after a small area is stripped. It is not always necessary to remove all the overburden from a deposit; in some cases base or roadstone can be made at a scalping screen between the primary and secondary crushers. Where unusually severe conditions exist, such as pockets or seams requiring tedious cleaning by hand, stripping can, in some cases, be supplemented by scalping. He also observed that an amount of overburden remaining which would not be objectionable on a 50-ft. face might be on a 20-ft. face.

The removal of overburden above the rock line, according to Mr. Bratton, is usually a simple digging and loading job which is often let to a contractor. But, he said, one must be sure to haul the overburden to an area out of range of future operations. The removal of overburden in pockets or seams is usually done with a dragline, a backhoe, or by hand shovels. Where there is soft rock, a tractor-ripper can sometimes be used and sometimes there are boulders which must be blasted. In one quarry with serious pockets the top was cleaned with pans, followed by a dragline. The clean pockets were then filled with screenings, so that the drills could work and shoot it all down. In closing, Mr. Bratton emphasized that a good stripping job simplifies all following operations.

Crushing for Quality L. J. Burris, chief engineer, Weston & Brooker Co., Columbia, S. C., said in his paper on *Crushing for Quality* that the first problem is to remove soft and deleterious material, if possible, ahead of the crusher. If an eliminator is used, its speed should be adjusted to break up the soft material only. He emphasized also that no gradation control is possible without testing screens, and curves should be made from production samples. In order to meet gradation specifications it is sometimes necessary to use two secondary crushers with different settings.

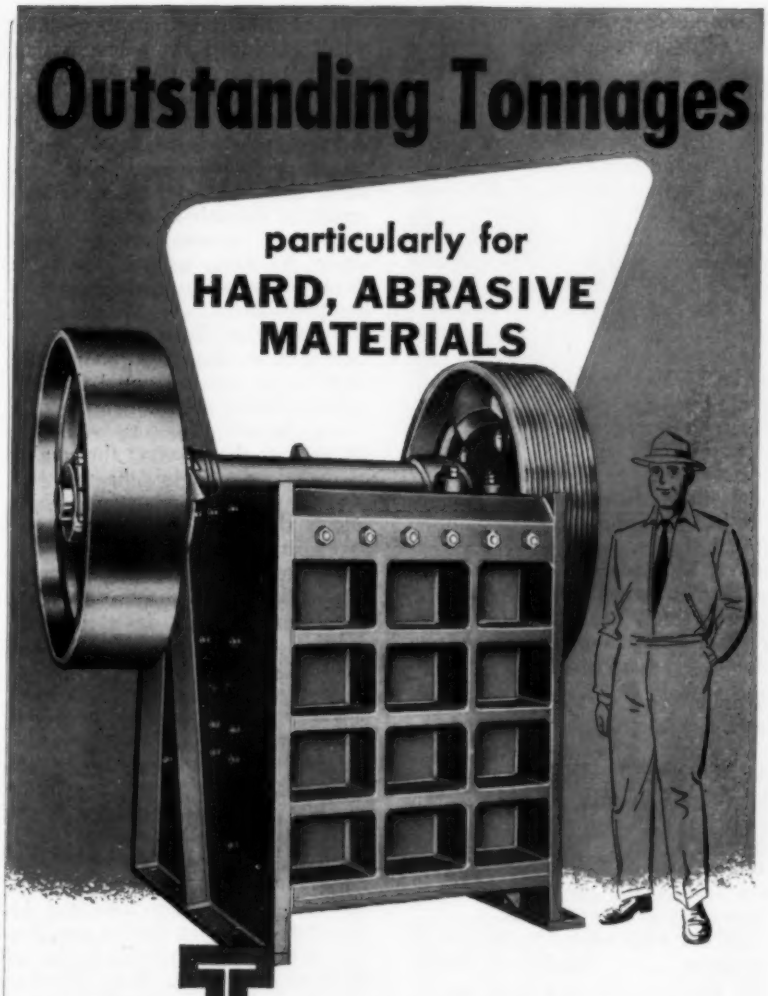
The No. 1 problem is often par-

ticle shape, according to Mr. Burris, and this can be solved in several ways. An impact crusher will make the most cubical product with the least flats, but it will also make the most fines. The flat and elongated particle problem is often found in the oversize from a jaw or a gyratory crusher. This problem, he said, can be solved by closed-circuiting the crusher. Sometimes also 3-stage crushing will result in flats, where two or four stages will not, or *vice versa*. Sometimes the use of more and smaller crushers will help, as will also running the crushers full, so that the elongated particles will break on themselves. Mr. Burris pointed out that the type of feed, the type of crusher, or too great a ratio of reduction may be responsible. Worn crushing surfaces in any type of crusher may also be responsible for flats.

Screening for Quality In *Screening for Quality*, M. Hankin Jr., executive vice-president, North Jersey Quarry Co., said that it is the practice in processing New Jersey trap rock to remove dirt, wet fines, and the softer cap rock between the primary and secondary crushers. In wet weather ¾-, 1½-, and 3-in. roadstone have been made from this material. At other times it is stockpiled and later reprocessed with the regular stone.

According to Mr. Hankin, the old-style rotary screen is best for removing coating from rock, but capacity is low. He pointed out that close screening is just as important for fractional sizes to be recombined as it is for straight products. A narrow feed chute wastes screen area at the feed end; and if the feed is moving too fast, it will surge over half the screen. A conveyor feeding to the screen in reverse direction *via* a box is best. An inclined screen, he said, should be operated as fast as possible with counterflow rotation, unless overloaded. In the latter case a suspended piece of belt conveyor will keep material from backing over to the deck below.

For accurate screening it is often advisable to use two decks to make one size of material; and, according to Mr. Hankin, the screen opening can be slightly over the desired maximum for various sizes. The tension on screen cloth is important for long life, and on smaller sizes it should be braced in the center. In tests of material ahead of each screen it was found that the actual perforation was below theoretical. He also urged that capacities be figured on the actual screen area.



NEW McLANAHAN JAWMASTER CRUSHERS

With force-feed action and long jaw design, these high-capacity, all steel Jawmasters feature roller bearings throughout. There are thirteen models—ranging from 10 x 16 to 40 x 48, with capacities up to 750 tons per hour.

Write for Bulletin JM-56.

McLANAHAN AND STONE CORPORATION
253 Wall Street, Hollidaysburg, Pa.
McLANAHAN
Manufacturers — Founders — Machinists
Sales Offices in Principal Cities of the United States
Pit, Mine and Quarry Equipment Headquarters Since 1835

Rinsing and Washing John Cibula, vice-president in charge of operations, Bradford Hills Quarry, Inc., East Petersburg, Pa., mentioned various methods of *Rinsing and Washing for Quality* and described in detail the method used at his plant for cleaning up a large pile of 1¾-in. minus dirty stone. The actual cleaning was done with a pool washing screen equipped with three horizontal washing troughs and sprays. The combination of sprays and the swirling motion set up in the troughs produced a clean coarse product. Fines went to a sand drag which made a clean fine product. Because of the success of this temporary setup, said Mr. Cibula, a permanent installation was made following the primary crusher. In answer to a question, he stated that waste fines, 94 percent minus 200-mesh, go to a series of settling basins with clear water going to a stream. The fines are not reclaimed but dug out and hauled to a dump, when necessary.

Stockpiling and Reclaiming *Various Methods of Stockpiling and Reclaiming to Maintain Quality* were described by John Kawaske, general superintendent, Callanan Road Improvement Co., South Bethlehem, N. Y. For very large plants he recommends the use of storage silos and their interstices to hold down segregation, with stone ladders to eliminate degradation, and reclaiming *via* a tunnel. For large plants a boom stacker so controlled as to lay the material in layers gives minimum segregation. Dual reclaiming tunnels can be used for maximum line storage capacity. For average-size plants, up to 3000 t.p.d., Mr. Kawaske recommends bin storage, with the excess going to stockpiles.

In answer to questions, it was brought out that watering the roadways to hold down dust helps to keep stockpiled material clean. Rinsing stockpiled material before loading also helps. Mr. Kawaske also said there is no economical cover for stockpiles.

SPECIFICATIONS, TAXES, WASHINGTON SCENE

Flexural Strength Specifications To underline the *Significance to Stone Producers of Flexural Strength Specifications for Pavement Concrete*, Dr. A. T. Goldbeck, N.C.S.A. engineering consultant, first showed a series of slides illustrating the forces which a concrete pavement must resist.

It could be seen from these slides and Dr. Goldbeck's commentary that a concrete pavement acts like a wide beam. The effect of varying temperature at the top and bottom of a slab under both day and night conditions were shown as measurable bowing or humping. In the former, dead weight of the slab, along with wheel loads, will create bending stress along the sides, as will the same forces acting in the central area of a humped slab.

Noting that beam resistance is expressed in terms of modulus of rupture, the speaker stated that the latter is influenced by many factors. These include, it was said, the strength of the cement; the quality of the aggregate used; the temperature of the soft concrete, which affects the water-cement ratio and hence its strength; temperature and degree of curing; condition of wetness of the hardened specimen when tested; and other variables.

While it is the practice to determine required concrete proportions for specified strength on specimens made under carefully controlled laboratory test conditions, it was indicated that tests on samples obtained in the field will provide a much wider range of results due to uncontrolled field conditions. To control that range and provide concrete uniformly meeting required strength, the speaker indicated his preference for that type of specification which requires daily testing of field-made concrete. It was felt that the mean 28-day strength specified for any four consecutive sets of tests should be that used for the thickness design of the pavement slab.

In conclusion, Dr. Goldbeck stated that there are too many variables to guarantee that a given cement factor determine by laboratory tests will produce like strengths both in the laboratory and in field specimens. However, he said, laboratory tests will give a fair indication of the cement factor which should be used. as well as provide information useful in correcting field proportions.

Taxes *You Can Help End Tax Discrimination* was the subject of a paper prepared by Walter G. Koch, president, International Steel Co., Evansville, Ind. Points presented in this discussion were based on a five-year tax reduction plan developed by the National Association of Manufacturers, of which Mr. Koch is vice-president.

Based on the premise that the present steeply graduated individual income tax rates are discriminatory, the N.A.M. has recommended its plan as a solution. Among the points established during the study leading to the establishment of the plan is the fact that the normal tax bracket currently supplies 84 percent of the revenue, while 16 percent is furnished through surtax.

The N.A.M. plan, it was noted, has two parts: (1) a gradual reduction of personal taxes over a 5-year period at the end of which the maximum rate would be 35 percent (including both base and surtax); (2) a 5 percent reduction in corporate tax in the first year of the plan, followed by a 3 percent reduction in each of the succeeding four years in arriving at a top rate of 35 percent.

In view of the yearly industry growth rate, this plan would provide all the fiscal revenue required by the government. It was noted further, however, that a ceiling on government expenditure is strongly recommended. With respect to equity in the plan, and its acceptance, it was reported that many groups favor even lower rates than proposed here, and one interesting factor in its acceptance is the growing awareness of excessive tax rates by laymen due to publicity concerning the low take-home winnings of TV contest winners.

It was indicated that much could be done to put the plan into effect. Publicity is increasing, and support is growing, but the strong recommendation was made that in order to make these efforts effective soon, a concerted effort must be made to acquaint Congress with the fact that acceptance is widespread. The suggestion was made that each individual take positive steps by contacting his congressman and encouraging his associates to do the same.

Percentage Depletion Again, for this convention, John F. Lane, Gall, Lane, and Howe, general counsel for N.C.S.A., reviewed the *Significant Highlights of the New Percentage Depletion Regulations.* Mr. Lane noted that while new regulations for administration of the 1954 Revenue Act have been issued, they have, in effect, raised more problems than they answer, and they are still in proposed form.

It was indicated that the general counsel has filed a brief with the Treasury Department in opposition to some sections of the regulations. The Department recently held five days of hearings on controversial points, and it will probably be late spring before the final regulations are issued.

Mr. Lane stated that probably the most important point is the cut-off for allowable processing. This has been a problem under both the 1954 and preceding Acts, but it has not even appeared in the new regulations. He also took cognizance of other factors involved, including the right of election to aggregate mineral properties now and make a later change if desired, the definitions of economic interest (which it was suggested be studied by producers), and the provisions for deducting certain exploration and development expenses.

Washington Scene An appraisal of political developments in the nation's capital was presented by James W. Douthat, assistant vice-president, government relations division, N.A.M., in *A Washington Preview of What Lies Ahead*. Mr. Douthat indicated that political liberals are seeking power today, and are intensifying their efforts at the top level in Washington. This situation is common to both major parties, he said.

It was pointed out that several important issues are currently pending in Congress. The discriminatory tax system was pointed out as an area in which Congress will probably take no action without strong prodding from the taxpayer. Noting that increasing revenue and corresponding surplus is being offset by increasing expenditure, the speaker stated that we are facing the greatest peacetime spending in history. Most of this spending, it was said, is funneled to domestic governmental agencies.

With respect to labor legislation, it was indicated that the liberals will attempt repeal or revision of the Taft-Hartley Act this year. Right-to-Work laws are a basic issue, and further consideration will probably be given to minimum wage coverage. The matter of growing labor power is in the forefront, and there is a possibility that a curb may be sought in the realm of anti-trust legislation.

Social Activities Serving as presiding officer at the greeting luncheon on the first day of the convention was Clarence Camp II (Camp Concrete Rock Co.). Following the presentation of the safety awards described previously, the featured speaker, Captain W. C. Mott, U.S.N., office of the chairman, Joint Chiefs of Staff, was presented.

As a former White House aide under presidents Franklin D. Roosevelt and Harry Truman, Captain Mott has had a wealth of experience from which to provide his listeners with an interesting discussion. Sprinkling his speech with several humorous anecdotes pertaining to several high-ranking persons, the Captain's main theme concerned whether or not this country and the rest of the free world can successfully negotiate with the Communists.

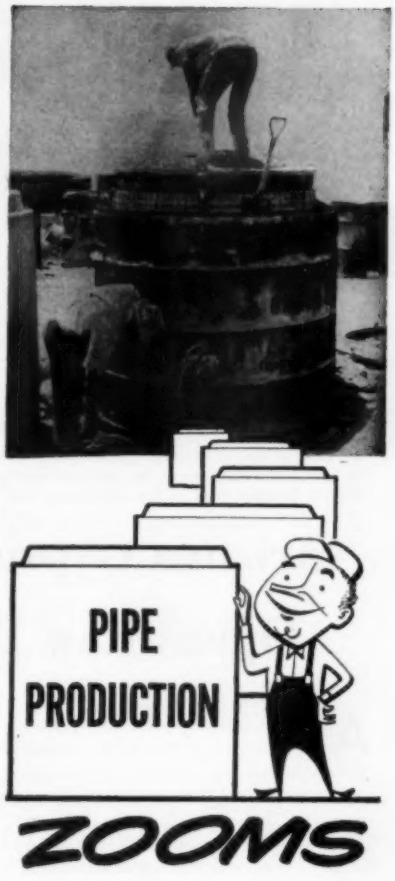
If we had been successful in the past, it was pointed out, there would be no need for the Eisenhower Doctrine, standing forces overseas, etc. Nevertheless, the speaker noted, present and former presidents and government and military leaders all declare that there is no alternative—successful negotiations must be achieved, and this under international law. Otherwise, as the Captain significantly stated, there will be no more conventions such as this one, or even the pleasant surroundings in which to hold them.

The N.C.S.A. Fiesta on Tuesday evening was greatly enjoyed. A fine dinner and entertainment contributed to the guests' pleasure, as well as the striking atmosphere of the Americana's pool patio, where the Fiesta was held.

W. T. Ragland Jr. (Superior Stone Co.) presided over the general luncheon on Wednesday, at which the featured speaker was Arthur C. Horrocks, public relations counsel, Goodyear Tire & Rubber Co. Using a combination of philosophy, history, and economy, Mr. Horrocks delivered a thought-provoking discussion of the road on which our society is traveling and what lies ahead. Drawing an analogy to the current road program, the speaker noted the highways of current research—on food, materials, weather, atomic power, etc.—all dedicated to the improvement of human society throughout the world.

At the final meeting, the annual banquet, N.C.S.A.'s president, N. E. Kelb, presided. Guests attending were well rewarded with entertainment provided by outstanding performers, including the well-known singer, Marguerite Piazza, and popular ventriloquist Jimmy Nelson (with the inimitable Danny O'Day).

Along with the above social affairs, the ladies in attendance at the convention were provided with other interesting activities, including boat and sightseeing trips. There was, of course, also the opportunity to swim, and to bask in the Florida sunshine. Hostesses for the ladies' entertainment were Mrs. N. E. Kelb, Mrs. Clarence Camp II, and Mrs. Wayne W. King.



When you put Cleveland form vibrators on the job.

- **adjustable vibration force**
- **quick-connect portable mounting brackets**
- **easy to maintain, only one moving part**
- **wide range of sizes, air or electric**

Write today for a complete catalog and price list.

Air or Electric

Portable or Permanent

Silent or Standard

2710 Clinton Ave. • Cleveland 13, Ohio

This view of the Winkelman operations of Arizona Gypsum Corporation shows a quarry truck about to unload at the hopper and crusher, and the conveyor which carries the crushed rock to a rod-deck screen over the bins. Since the photograph was taken, another conveyor has been installed to carry rock to the pulverizing and packing department.

Arizona Gypsum Corporation Opens Raw Products Plant

A NEW plant for the production of raw-gypsum products recently went into operation near Winkelman in south-central Arizona. Owned and operated by the Arizona Gypsum Corporation of Phoenix, the main product is retarder, used in the manufacture of portland cement. The company supplies this ingredient exclusively at present to the Arizona Portland Cement Company at Rillito, the state's only cement plant.

The deposit, about 10 miles south of Winkelman, is said to be the purest and most extensive in the state and is shared by the Union Gypsum Company, also of Phoenix.

A shallow quarry face 10 to 12 ft. in height is being worked. Overburden consists almost entirely of pure gypsite, with sparse desert vegetation, and none of it is stripped before blasting. A ¾-cu. yd. Marion diesel shovel loads the rock into two International dump trucks, each carrying about 7 tons, for delivery over a short haul to the 15-ton plant hopper.

A Marco apron-feeder beneath the hopper regulates the flow to a Cedarapids 15- by 24-in. jaw crusher, which brings the top size down to minus 6 in.; the crusher product goes *via* an inclined belt-conveyor to a Symons rod-deck screen over the bin structure. Screen oversize, a minus 6-in. plus ¼-in. product, is cement retarder which is stored in a 35-ton truck-loading bin. A company-owned Kenworth Fruehauf semi-trailer hauls 20-ton loads of the retarder rock to railhead at Winkelman for delivery to the Rillito cement plant.

Minus No. 4 fines, mostly overburden, are wasted. The same bin which stores the retarder product supplies feed to the pulverizing department, where the gypsum is ground to 85 percent passing 100-mesh for agricultural and commercial uses. The initial reduction here is made by a Dixie Mogul Jr. hammermill, followed by a Raymond Imp mill with closed-circuit air-separation. The product is bagged by a St. Regis 2-tube packer under the firm's "Desert Diamond" brand name.

Below: The semi-trailer which carries 20-ton loads of gypsum retarder to railhead, about 12 miles distant.

Right: The valve-bag packer, the air-separator, and (right) the impact mill, where raw gypsum is ground to 85 percent through 100-mesh and bagged.

It will pay you to **LEAP** *into this profitable new business...*

"LIGHTWEIGHT AGGREGATE"

...but **LOOK** first

HERE'S WHAT YOU SHOULD KNOW!

There are hundreds of different types of clays and shales—all with different bloating characteristics.

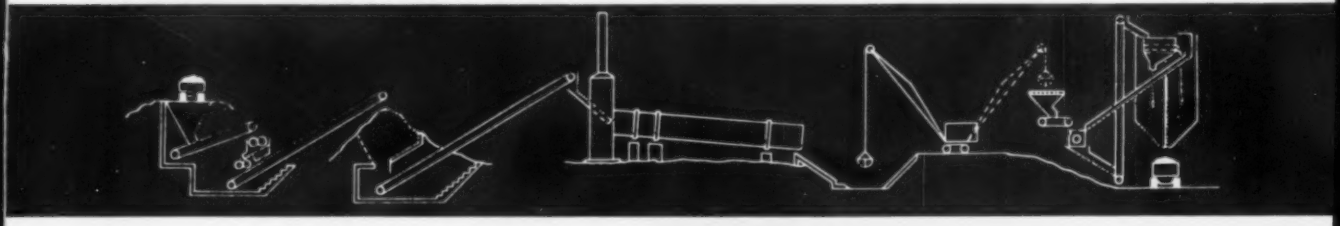
The selection of the process for preparing lightweight aggregate of the proper characteristics and size is determined by the raw material and must be made with care. McNally Pittsburg researchers, designers, and engineers have conducted a careful study of the best processing methods, and the design and construction of plants and equipment for the profitable manufacture and processing of lightweight aggregates in all parts of the country.

Last year there wasn't enough lightweight aggregate to "go around."

America's greatest Building Boom is just getting under way—and no end in sight for at least 10 years.

Builders and architects are fast turning to concrete and blocks made with lightweight aggregate!

That's why the wise operators are saying, "Let's get into a new business,'LIGHTWEIGHT AGGREGATE.'"



"Ask the men who know"

McNALLY PITTSBURG MANUFACTURING CORPORATION

DESIGNERS AND BUILDERS OF EQUIPMENT FOR BASIC INDUSTRY

COMPLETE PLANTS OR SINGLE MACHINES

Clay Disintegrators
Clinker Breakers
Conveyors • Coolers • Hoists
Jaw Crushers • Kilns
Roll Crushers • Vibrators
Apron and Reciprocating Feeders
Materials Handling Equipment

GET THIS FREE BROCHURE AND SPECIAL INFORMATION

McNally Pittsburg Mfg. Corp., Dept. P
Pittsburg, Kansas

Gentlemen:

Please send brochure on Lightweight Aggregate plants. ☐

Desired capacity of plant per day is _____.

Shale ☐ Clay ☐

Name_____ Title_____

Company_____

City and State_____

Russell W. Hunt (Southwest Lime Co.), left, new chairman of the board of N.A.L.I., is congratulated by last year's president, Leonard S. Fry (Fry Coal & Stone Co.).

Annual N.A.L.I. Meeting Reflects Vigor of Aglime Industry

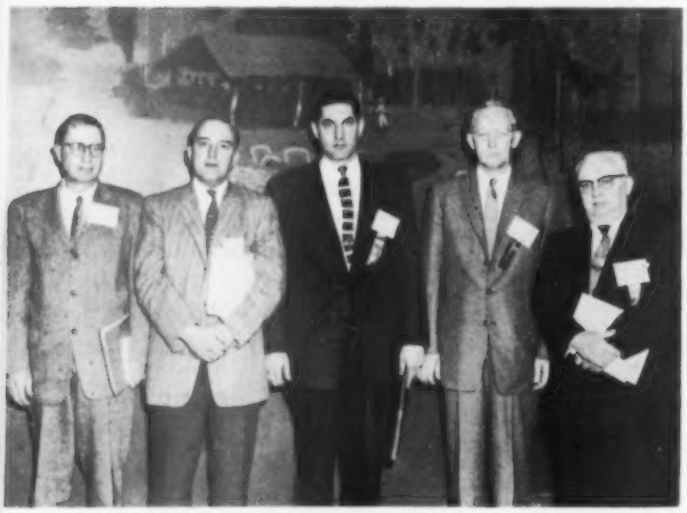
Another ON THE SPOT Report

REFLECTING the vigorous interest of its growing membership, the 12th annual convention of the National Agricultural Limestone Institute, held at the Statler Hotel, Washington, D. C., on January 22 and 23, added another highly informative meeting to the group's energetic history.

Along with the members, the guest list included a number of widely-known congressional leaders and agricultural administrative officials from both national and state levels, who took an active part in several of the group's discussions.

The topics dealt with included such timely matters as the recent activity in the Department of Agriculture's conservation programs. Operating problems and consideration of forceful aglime promotion were the subjects of other panel discussions. Assistant Secretary of Agriculture Ervin L. Peterson, along with five agency heads, formed the panel that discussed conservation practices and developments.

Preceding the general session, two days were devoted to executive, individual, and joint committee meetings. Since the schedule was set up so that inauguration day fell between the committee and general meetings, those attending were also able to take in various inaugural activities.



Panel speakers at the operating session included: Charles Rich (Swanton Lime Works); William J. Clark (Munnsville Limestone Corp.); T. B. Stafford, presiding officer; Arthur R. Alvis (Alvis Limestone & Concrete Co.); and Russell W. Hunt (Southwest Lime Co.).

President's Address N.A.L.I. President Leonard S. Fry (Fry Coal & Stone Co.), presiding over the first general session, presented in his welcoming address a resume of association activities during the last year. Mr. Fry took special note of the outstanding growth recorded by the institute during its 12-year existence, and stated that 29 new members were added during 1956.

While there were no startling developments, he said, a year of steady progress was recorded. The 50 percent ceiling on government cost-sharing for liming has been breached, it was stated, which should have a favorable effect on farmer participation.

The association has encouraged the policy of placing soil testing on an advisory basis, Mr. Fry noted, and added that during the year seven more states dropped the mandatory requirement. With respect to possible increases in freight rates, it was indicated that association representatives are actively opposing such proposals.

The president concluded his remarks with commendation for the staff, citing particularly the efforts of Robert M. Koch, executive secretary, and his assistant, Samuel Omasta, who have attended numer-

The featured speaker at this annual N.A.L.I. banquet was Senator Karl E. Mundt of South Dakota.

ous meetings and have called on hundreds of producers throughout the country during the last year.

Coming Meetings This year the mid-year N.A.L.I. directors meeting has been scheduled to take place in Chicago. The dates are June 17 and 18, with the Edgewater Beach hotel as the location. The 1958 convention will be held on January 22 and 23, in Washington, D. C., with the Statler Hotel again as headquarters for that 13th annual meeting.

Officers and Directors A revision to the N.A.L.I. bylaws, which was approved by the board and accepted by the members, established new titles—chairman of the board, vice-chairman, and president and general manager—for the top three executive posts in the institute. Elected to these respective offices during the convention were Russell W. Hunt (Southwest Lime Co.), William E. Stone (Piqua Quarries, Armco Steel Corp.), and Robert M. Koch.

Elected as new members of the executive committee were: Robert M. Bridges (Consumers Co.), Buford V. Everett (Everett Quarries, Inc.), L. R. Falk (L. R. Falk Construction Co.), Clarence A. Munz (Eastern Rock Products, Inc.), and E. B. Snead (Texas Crushed Stone Co.).

R. B. McNab (American Limestone Co.) was elected to a regional vice-presidency, while newly-elected members of the board of directors include: Robert M. Patton (New York Coal Co.), R. O. Bemis (Basic, Incorporated), and T. C. Adams (Cedar Bluff Stone Co.). Elected as honorary directors were Herbert C. Gray, Tulsa, Okla., and Vincent H. Shea (Shea Chemical Co.).

Manufacturers Division Chairman Jules E. Jenkins (Vibration Measurement Engineers) presided over the annual meeting of the Manufacturers Division of N.A.L.I. A report on activities and membership of the group was presented by E. C. Farrar, chairman of the membership committee.

New officers and directors were elected during this meeting. The new chairman is Ralph C. Johnson (Simplicity Engineering Co.). George S. Harvey (Owens-Illinois, Multiwall Bag Division), P. K. Alvord (E. I. du Pont de Nemours Co.), and Harry A. Wendler (Highway Equipment Co.) were re-elected vice-chairman; W. H. Van Buren (Quaker Rubber Corp.) was newly elected to a vice-chairmanship, and D. H. Weber (King Powder Co.) is the new secretary.

In addition to the ex-chairman, new chairman, and vice chairman who automatically become members of the board of directors, three new directors were elected. These were: Walter R. Law (Atlas Powder Co.); C. L. Rosselot (Even Spread Co.); and W. H. Van Buren (Quaker Rubber Corp.).

The conservation panel speakers included several top Department of Agriculture officials. Shown here are: C. M. Ferguson, administrator, federal extension service; D. A. Williams, administrator, soil conservation service; Assistant Secretary of Agriculture Ervin L. Peterson; Robert M. Koch, N.A.L.I. president, panel moderator; Paul M. Koger, ACP administrator; H. J. Doggett, director, soil bank division; and H. L. Manwaring, deputy administrator, production adjustment, commodity stabilization service.

3,000 TONS OF

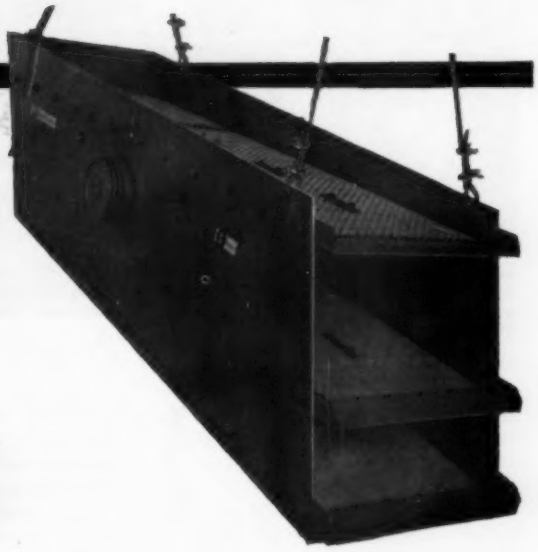
handled by a SIMPLICITY grizzly feeder at Badger Materials in Indiana

Start of the operation is shown here as a seven-yard truck dumps aggregate into a 25-yard receiving hopper. Feeding from this hopper is a Simplicity 3′ x 10′ OA-10-A2 Grizzly Feeder. The stone is fed off the grizzly bars and into a large gyratory crusher. The undersized material passes easily through the bars and onto a belt running under the crusher (the belt also receives crushed stone from the crusher). From here the material is fed into a plant which acts as a secondary crusher.

The material then travels up another belt, goes through a washer, and is discharged . . . onto a Simplicity 4′ x 12″ Simpli-Flo, 3-deck screen. Further washing is accomplished by spray bars on the Simpli-Flo, which is suspended by overhead springs and cables. The various sizes of material are dropped into hoppers and hauled away by trucks. Sand and undersized are sluiced off for separation.

171

·AGGREGATE A DAY

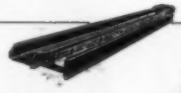


Simplicity Simpli-Flo Screens are two-bearing screens, generally hung by springs and cables from overhead supports. Simpli-Flo screens omit the usual main frame and outboard bearings, thereby offering minimum width for installations where width is a problem. On these double-end drive screens, the eccentric shaft is counter-balanced for efficient true circle operation; bearings are heavy duty eccentric type, protected against dust and water by labyrinth seals; discharge lips are readily accessible; and screen cloth is arranged for easy changing.

The Simplicity Grizzly Feeder combines scalping and feeding in one operation. This unit eliminates the old type arrangement of apron feeder and stationary grizzly. You will gain additional plant room. Your operating and maintenance costs will be cut by 50%. Simplicity Grizzly Feeders use an inertia type drive mechanism, and can produce heavy action, allowing sizes up to 6′ x 20′ and capacities up to 1,000 tons per hour. They maintain positive and controlled feed rates under the bin . . . bridging of material in the hopper is eliminated.

OTHER SIMPLICITY PRODUCTS INCLUDE:

- Os-A-Veyor Feeders
- Simplicity Gyrating Horizontal Screens
- Simplicity 32 Series Balanced Conventional Pan Type Vibrating Conveyors
- Simplicity Woven Wire Screens . . . Send for Catalog No. 66



SALES REPRESENTATIVES IN ALL PARTS OF THE U.S.A.

FOR CANADA: Simplicity Materials Handling Limited, Guelph, Ontario

FOR EXPORT: Brown and Sites, 50 Church St., New York 7, N. Y.

Simplicity
TRADE MARK REGISTERED

ENGINEERING COMPANY • DURAND 12, MICHIGAN

Several aglime promotional efforts were described by this panel which includes: W. Dean Fyock (Fry Coal & Stone Co.); Lowell Glendening (Mulzer Brothers); Lynn N. Stewart, panel co-chairman; Samuel Omasta, N.A.L.I.; Robert N. Stewart, Columbus, Ind.; and William E. Stone (Piqua Quarries, Armco Steel Corp.).

Committee Reports Reporting for the bylaws committee, Joseph J. Griesemer (Griesemer Quarry) submitted the revision to the bylaws that were approved by the board and accepted by the members, in which new nomenclature was established for the top three executive posts.

Recommendations of the promotion and education committee, of which Lynn Stewart (Meshberger Stone Co.) is chairman, endorsed continuing effort toward obtaining congressional and other national leaders as speakers at future meetings.

William E. Stone (Piqua Quarries, Armco Steel Corp.), chairman of the membership group, summarized activities undertaken by his committee during the past year, including a 5-letter mailing program which was set up last June for distribution at the local level, and the preparation of an advertising blotter that lists for the recipient various benefits of membership in N.A.L.I.

A combined report for the five regions was presented by Robert M. Bridges (Consumers Co.), N.A.L.I. vice-president of Region II. Several recommendations were made on the basis of data summarized from a questionnaire distributed through all regions. Points in these recommendations included: elimination of the mandatory soil test, advocation of purchase orders in those states not providing contracts, raising payment rates for the government portion of cost-share liming, broadening of the base of approach in promotional material, and restoration of conservation administration funds for the purpose of direct contact work in signing up farmers.

In a floor discussion following the combined regional report, the point was made that while the theory of advance soil testing appears favorable, the result, with respect to liming, in putting the theory into practice is quite another matter. It appears, as one member noted, that difficulty in administration of the practice is holding down farmer participation despite a real need for soil tests.

As a compromise already put into effect in some areas, it was noted that some states have allowed liming —to the extent of 1 to 3 tons per acre—prior to soil testing; and if the test, when obtained, indicates the need of a change, such is made. It was suggested that this procedure could have a favorable effect in increasing farmer acceptance in other areas.

Following a statement by Mr. Koch to the effect that there are now 24 states in which the mandatory test regulations have been modified, the query was made as to the results of this change with respect to farmer participation. In reply, it was noted that during 1955 an average 18.8 percent gain had been realized in those states, while in the balance there was a substantially lesser use.

In presenting another reason for this industry's unfavorable reaction to the mandatory test, Mr. Koch stated that there is widespread evidence of variation in testing techniques, a situation which has resulted in a wide range of reported pH in different analyses of a given soil sample.

Discussion of a statement by the president that the degree of use of conservation program funds is an indication of the success of promotion brought out the suggestions that greater activity on the part of county people in contacting farmers would lead to greater lime use by the lat-

Officers and directors of N.A.L.I. in this group include (front row): Robert M. Koch, president and general manager; Clarence A. Munz (Eastern Rock Products); Russell W. Hunt (Southwest Lime Co.), elected to the new post of chairman of the board; J. B. Mount (Maymead Lime Co.), secretary-treasurer; and Buford V. Everett (Everett Quarries, Inc.). Back row: R. B. McNab (American Limestone Co.); Leonard S. Fry (Fry Coal & Stone Co.), retiring president; E. B. Snead (Texas Crushed Stone Co.); William E. Stone (Piqua Quarries, Armco Steel Corp.), who takes the new post of vice-chairman of the board; and Lynn N. Stewart, Columbus, Ind.

Congressman W. R. Williams (N.Y.), member of the House Committee on Agriculture; H. L. Manwaring, deputy administrator for production, USDA; director C. A. Munz (Eastern Rock Products, Inc.); and director Robert M. Patton (New York Coal Company).

ter, and that the N.A.L.I. promotion committee develop brochures to be mailed directly to rural route boxholders (farmers) as an educational effort.

In concluding the foregoing discussions, Mr. Koch stated that the most significant development beneficial to the industry during the last year, is the relaxing of the ceiling rate on the government part of cost-sharing. This, it was noted, is potentially the greatest encouragement to farmer participation in the ACP program, and should result in full use of its $250,000,000 allocation.

Koch's Address Robert M. Patton (New York Coal Company) presided at the convention's opening-day greeting luncheon, at which Robert M. Koch presented his annual review of activity in the agricultural limestone industry and the conditions anticipated for the future.

Noting that N.A.L.I. had come a long way in the last 12 years, Mr. Koch reported that there are now 435 active members. An important result of the growing vigor of the organization, it was said, was the strong support furnished by the group in the successful opposition to congressional elimination of the A.C.P. program a few years ago.

With a background chart showing graphically the jump in consumption of aglime when the A.C.P. went into effect in 1936, the speaker recalled that a peak of 30,000,000 tons was reached in 1947. In comparison with that figure, as well as lesser annual amounts used since that year, the speaker pointed out that agronomists estimate current agricultural requirements by the nation's soils to be 80,000,000 tons.

Emphasizing the need for this country to conserve soil as one of its most critical natural resources, Mr. Koch cited the cases of India and China where, despite large land areas, the soils cannot feed the population adequately. Cognizance of the need for conservation is evident in the $250,000,000 A.C.P. funds requested by the President for the fiscal year 1958; and, it was added, an allocation of $500,000,000 may be expected in the future.

Referring to the Soil Bank, Mr. Koch commented that this has been regarded as a panacea in many sections of our economy for the curing of many conservation ills. It was pointed out that the Soil Bank program has two parts—the acreage reserve section, and the conservation reserve program. The latter, it was noted, is not yet working as expected, and in some states few, if any, farmers are taking part.

A current goal, Mr. Koch stated, is to acquaint Congress with the possibility of making the plan workable through certain revisions. It was suggested that this could perhaps be achieved through modification of the Soil Bank to make it a part of, or a supplement to, the A.C.P.

Concluding on an optimistic note with respect to the future, the speaker stated that industry sales of aglime under the impetus of the A.C.P. would undoubtedly increase in following the raising of cost-share payment rates. It was added that there even now appears to be a favorable upward trend in liming on the part of the country's farmers.

Panel on ACP As in the last two years, the panel session devoted to the Agricultural Conservation Program was a widely appreciated feature of the general convention. A group of five top level United States Department of Agriculture men were headed by Assistant Secretary Ervin L. Peterson, who presented the general policies of the conservation program.

Agency heads who made up the panel included: C. M. Ferguson, administrator, Federal Extension Service; Paul M. Koger, administrator, ACP; H. J. Doggett, director, Soil Bank Division; D. A. Williams, administrator, Soil Conservation Service; and H. L. Manwaring, deputy administrator, production adjustment, Commodity Stabilization Service.

Robert M. Koch, N.A.L.I. president and general manager-elect, was presiding chairman and moderator for the panel discussion. In his introductory remarks Mr. Koch noted that the agricultural limestone industry has been tremndously helped by various federal programs, and gave a brief resume of the history of such legislation.

In opening the discussion, Assistant Secretary Peterson noted that while we have a large and rich country, we must realize that our physical resources have definite limits. This realization is growing, he said, and the subjects of resources, resource use, and conservation are in the public consciousness as perhaps never before in the history of the country.

Conservation groups, it was pointed out, are of many kinds and varieties, and since not all have the same purpose or objective, a definition of the term is necessary prior to the discussion of practices. Mr. Peterson indicated that he prefers to think of conservation in terms of the use of productive capacity of our land resource without impairing its capacity to continue producing.

Two factors were pointed out as of prime importance to the successful pursuit of a sound conservation effort. There were (1) education—because conservation cannot exist without an understanding of its nature, its significance, or its value; and (2) research—mandatory for an understanding of the physical and biological sciences that not only determine the productivity of our soils, but also the various combination of

conservation practices that will provide desired results.

The speaker indicated that water has become our foremost research problem, which is accompanied closely by the attack on erosion difficulties. It was stated that the Soil Conservation Service, ACP, and Soil Bank, along with other agencies, both state and federal, are all involved in fostering successful conservation programs, and that each will assume a part of the load.

Referring to the various public programs designed to protect the public interest in the nation's resources, Mr. Peterson emphasized that all of these efforts—which necessarily involve the expenditure of public funds—must pass a common test of their validity. This test, he said, is found in the answer to the question, "Is it in the public interest?".

Noting the tendency, at times, of the Federal Government to take more and more power unto itself, the speaker stated that such a situation must be constantly guarded against—particularly in the administration of conservation programs which, of necessity have to be put into practice at local levels in order to comprehend the varying types of conservation required by different areas.

Following the above remarks of the Assistant Secretary, Paul M. Koger, ACP administrator, commented on the use of agricultural lime as recorded since 1920. Stating that he had had the opportunity to visit a number of ASC offices in several states during the last year, Mr. Koger noted that he had found a widespread favorable reaction to the service provided by the members of this institute to the farmers in their respective states.

Pointing out that the first use of aglime in appreciable quantity took place in 1920, the speaker reported that producers had supplied more than a half billion tons of lime to farmers since that year. However, he added, the use of 20,500,000 tons in 1955 was only one-fourth of the estimated needs. Lime used with ACP assistance, it was said, accounts for somewhat more than 70 percent of producers' aglime sales, and constituted in 1955 about 15,000,000 cost-share tons.

Despite the statements made by many authorities that liming produces handsome returns—a yield as high as $25 for each $1 of investment has been estimated—the farmers are not buying much more lime on their own today than they did several years ago, Mr. Koger said.

Indicating his impression that the ACP, along with research, has done much to show farmers the benefits of liming, the speaker added that moneywise the ACP could probably not go much further in bridging the gap between the use and need for aglime. It was suggested, however, that steps could be taken to increase the use of purchase orders—a procedure which has apparently increased the use of aglime by improving ready availability.

In conclusion, Mr. Koger commented that raising lime use is a challenge, and that this industry must take the lead in meeting it. He assured the group of co-operation on the part of the U.S.D.A., and concurred in a statement made some time ago by president-elect Robert M. Koch to the effect that expanded promotional and educational efforts, along with conservation and extensive demonstration programs, present the greatest promise of meeting the mutual goal.

Prefacing his remarks with a brief background on the Soil Conservation Service, D. A. Williams, administrator of that agency, pointed out that the service was in effect brought into being with the first organized approach to soil and water conservation research in 1929. In 1935, according to the speaker, Congress passed a law which made the service a permanent agency within the Department of Agriculture.

Since that time, Mr. Williams stated, a number of congressional authorizations, including watershed protection, flood protection, and the long-range Great Plains program, have had an effect on the activities and responsibilities of the Soil Conservation Service. With particular reference to the watershed activities, the speaker stated that this involves an approach to a community problem on the part of local people, as a local project, and one which extends many principles of soil and water conservation as opposed to a single practice.

All programs, Mr. Williams added, are based upon taking into account them any types of soil in the country, a fact which ultimately leads to taking into consideration the desires and goals of the individual farmer, who thus takes on the aspect of being the common denominator of all conservation efforts.

In conclusion, the speaker commended the efforts of various groups, including the aglime industry, farm equipment people, bankers, and others who are giving strong support to conservation efforts, and added that this teamwork is the only way the job can be successfully handled in bringing it to fruition.

C. M. Ferguson, administrator, Federal Extension Service, discussed for the group the century-old background and current activities of the field of agricultural education. Mr. Ferguson noted that agriculture as a science is now rounding out its first 100 years in the United States.

Passage of the Morrell Act in 1862 (signed by President Lincoln) set into motion the activities in which the present Federal Extension Service plays such a large part. At about the same time, it was noted, the act was passed and signed creating the Department of Agriculture, and thus the two groups have grown up together.

Mr. Ferguson pointed out that the latter was actually set up to carry out educational work along lines similar to that of the extension service, but later got into the action programs which it now pursues. As a result of the growing research carried out by land-grant colleges, the point was reached where the government agencies and the educational institutions had to establish agreement on co-operative effort toward their common educational goal. As a consequence, Mr. Williams stated, an agreement drawn up in 1914 places major responsibility for the administration of an educational program with the state, land-grant colleges, and co-operating county government, while the Department of Agriculture maintains the extension service which administers extension work and distributes federal funds, provides counsel and guidance in a co-operative manner with the states, and provides liaison with other federal agencies.

Among the important phases of extension service activity, the speaker listed the following: emphasis on local program building which channels educational efforts directly to the farm families and communities; field demonstrations of good agricultural practices; soil testing; and integration of U.S.D.A., local, and land-grant school activities.

In conclusion, Mr. Williams urged the aglime industry to work closely with the local extension services, since the programs of the latter are developed at the local level, where the producr of aglime and the farmer are directly concerned.

As noted by H. J. Doggett, director of the Soil Bank, this newest organization in the Department of

(*Continued on page* 194.)

➔ Take a long look into the future. You'll see constantly growing industrial activity and millions of tons of *power-packed* Bituminous produced to sustain it, with *billions* still in reserve! B&O is a keystone to this vital supply and demand. The coal fields it serves hold proved, usable reserves of billions of tons of Bituminous for every purpose.

Today, tomorrow or decades ahead you may be sure that B&O Bituminous can be *your* best source of stable-low-cost power. It will pay you to use this *fuel with a future* NOW! *Ask our man!*

CONTACT OUR COAL TRAFFIC REPRESENTATIVE!
You'll receive details in the most efficient, low-cost Bituminous coal for your particular requirements.
COAL TRAFFIC DEPARTMENT B&O RAILROAD
Baltimore 1, Md. LExington 9-0400

BALTIMORE & OHIO RAILROAD

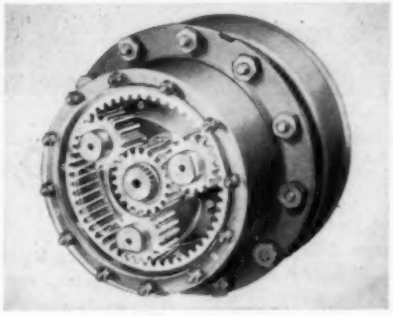
Announcing

AUTOCAR

A rugged off-highway dump truck with planetary-gear rear axle . . . capable of handling 15-ton payloads at speeds up to 39 mph

the NEW

AP-15



THE HEART OF IT is the planetary-gear rear axle. A "sun" gear at each end of the rear axle shaft meshes with three pinion or "planet" gears which in turn help drive the rear wheels.

AUTOCAR TRUCKS

Autocar Division of the White Motor Company
Exton, Pa.

Autocar

WHAT ARE THE ADVANTAGES OF THE AUTOCAR PLANETARY AXLE?

1. First and foremost, it provides long gear and shaft life for a giant truck.

2. It decreases torque load on axles and differential.

3. Owing to multiple gear-tooth contacts, it provides high torque capacity.

GOOD GROUND CLEARANCE, TOO. By dividing the axle ratio between the gear carrier mounted at the center of the rear axle and the planetary reductions at the outer ends we reduce the main drive gears in diameter and gain substantially greater ground clearance under the housing bowl.

15 TONS AT 39 MPH. The AP-15 hauls its big payload at 39 mph. It permits a fast trip cycle and thus hauls many more tons per working day.

AUTOCAR DRIVER CAB AND POWER STEERING make the AP-15 easy on the driver. The Driver Cab with its fully adjustable seat, form-fitting back, and accessible controls permits the driver to handle this hardworking truck all day long and like it.

AND, THIS AUTOCAR IS BUILT TO LAST

Nuts and bolts instead of rivets throughout. Reinforced, heat-treated alloy steel frame for flexibility as well as great strength. Replaceable bushings to save wear on more expensive major components.

For hauling fill, rock, potash, copper or coal, you can't beat this big Autocar AP-15. Ask your White-Autocar dealer for further information or write direct to us.

19,000,000 Cu. Yd. of Gravel For Great Salt Lake Fill

conveyor system, barges can deliver 90,000 t.p.d.

By HARRY F. UTLEY

BELT-CONVEYOR transportation of sand and gravel on a scale never before undertaken highlights the Great Salt Lake Fill Project of the Southern Pacific Railroad, which went into production in December, 1956.

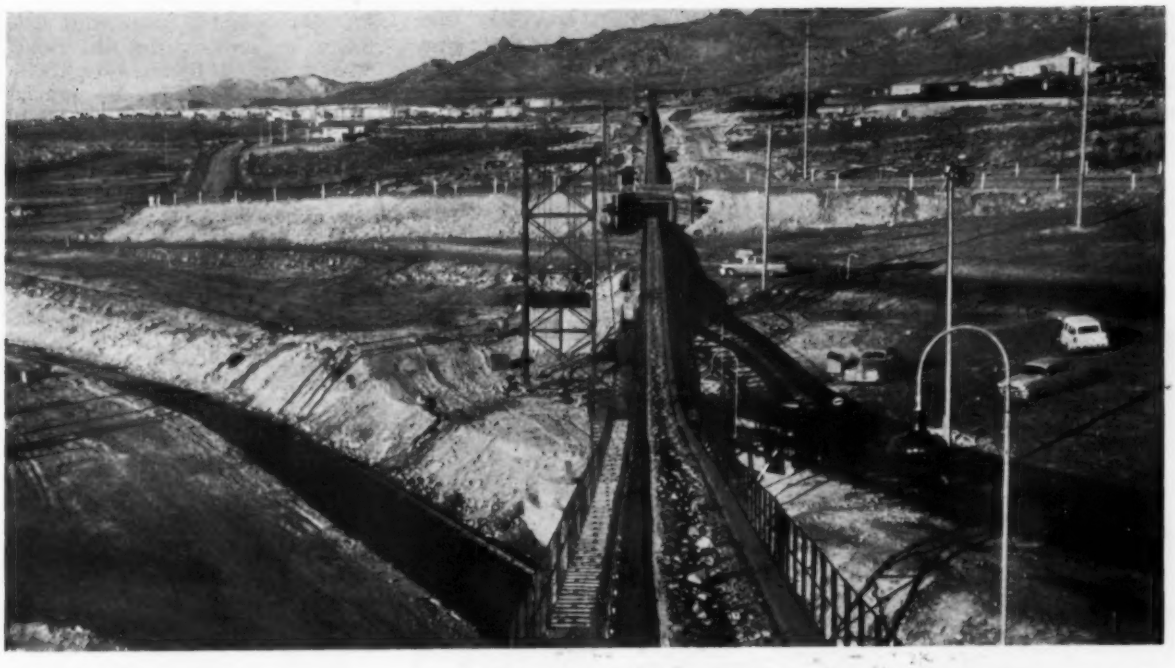
Longer conveyor systems have been and are being used, but none is believed to have employed such wide belting—54 and 72 in. Speed of the belts is 800 f.p.m., about twice the normal speed for conveyor-belt travel. Tonnage handled exceeds 4,000 hourly, and the target rate is 75,000 tons daily, although this can be upped to 90,000 t.p.d. on a 3-shift, 21-hour basis.

The end of a two-mile conveyor system which moves gravel fill from a hill to Great Salt Lake to build a 13-mile roadbed across it for the Southern Pacific Railway. Here the fill material is being loaded into a barge.

The result of placing the fill material will be a 13-mile causeway to replace the 52-year-old timber trestle portion of Lucin Cutoff, which was constructed across Great Salt Lake by the railroad to save the 42 extra miles originally required to by-pass the lake by a circuitous route. The new fill parallels the trestle, 1,500 ft. to the north of it. The Southern Pacific expects its Overland Route trains to be able to operate over the new embankment early in 1960. Meanwhile, 19,000,000 cu. yd. of sand and gravel will be excavated, screened, crushed, transported, and placed on the lake bottom and 13,000,000 cu. yd. of quarry-run and riprap rock will be blasted and barged to the fill to reinforce the embankment.

The $49,000,000 project calls for the purchase of $15,000,000 worth of machinery and equipment. Morrison-Knudsen Co., Inc., is the prime contractor.

The pit and one of the quarries are located on Promontory Point,



An interesting perspective — the main-line conveyor, with the pit in the distance.

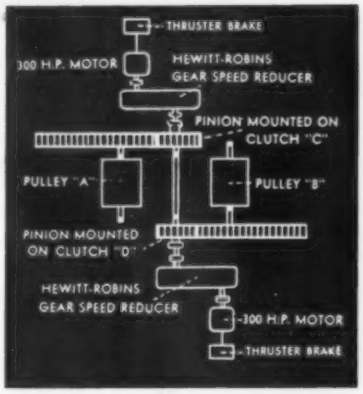
near the spot where the fabled golden spike was driven with much fanfare in 1869 to signal the completion of the first transcontinental railroad.

Sand and gravel from the borrow pit will ultimately be carried by a 54-in. by 9,900-ft. belt conveyor in three sections, downhill all the way, to a 52,000-ton storage pile. Belt length at the start was about 8,000 ft. The entire system, including pit equipment, recovery from storage and to the loading of the barges, was designed and supplied by Hewitt-Robins, Inc., under a subcontract from Morrison-Knudsen.

The drop in altitude from the pit to the barge-loading station is about 400 ft., so once the conveyor system was started, little or no power has been required. The 300-hp. motors driving each of the conveyor sections thus function as brakes to regulate the speed of descent and act, instead, as generators, feeding the gravity-generated power at the rate of about 600 kw.-h. back through the transmission line to the electric shovels in the pit.

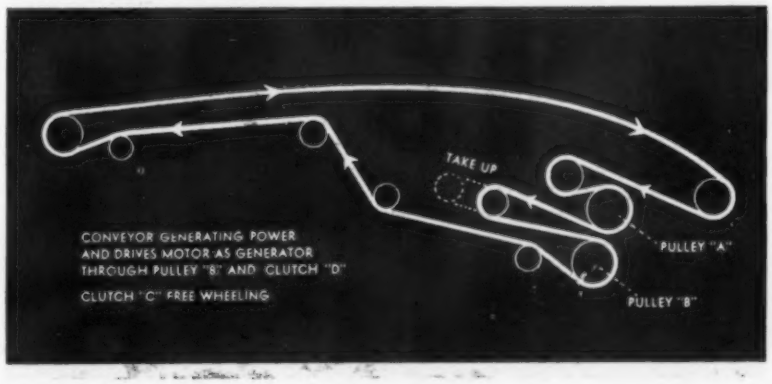
The drive mechanism, designed by Reinhardt Patterson and Leslie Weygandt, Hewitt-Robins engineers, utilizes clutches attached to a drive pulley and a holdback pulley. When power is needed to start the conveyor, the driving pulley engages automatically while the holdback pulley free-wheels. When the pull of gravity exceeds frictional forces, the holdback pulley takes over to regulate downhill speed to the maximum of 800 f.p.m.

The sand and gravel are excavated by 8-cu. yd. Bucyrus-Erie 150B shovels which load 25-ton Euclid bottom-dump trucks. There are a dozen or so of these trucks in operation on the project, and most of them are continually on the move, shuttling between the dumping station and the shovels. The station, actually a steel-and-concrete bridge over a dual 50-ton hopper, can accommodate two Euclids simultaneously. Hewitt-Robins feeders put the material over two 6- by 14-ft. Hewitt-Robins punched-plate scalping screens faced with skid bars. Any plus 8-in. boulders are chuted to a 36- by 42-in.



The main conveyor drive mechanism functions as a braking system, regulating the speed of the conveyors which operate downhill.

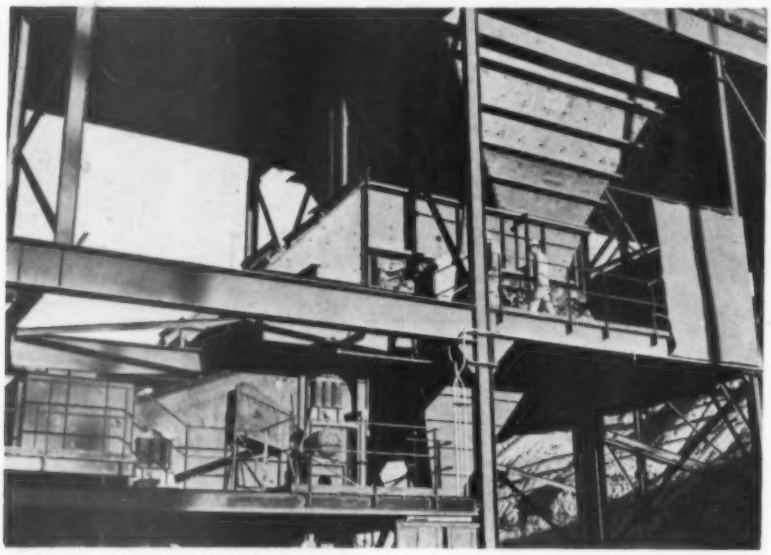
When power is needed to drive the conveyors, drive pulley A engages automatically and hold-back pulley B remains in free-wheeling. When the pull of gravity takes over, the hold-back pulley engages, regulating downhill speed.



Pioneer jaw crusher, since none of the fill gravel may exceed 8 in. in top size. A 30-ft. long accelerating conveyor running at 650 f.p.m. then transfers the prepared gravel to the main conveyor line. By imparting momentum to the material *via* the accelerating conveyor, transfer to the high-speed (800 f.p.m.) main conveyor system is done without shock or strain.

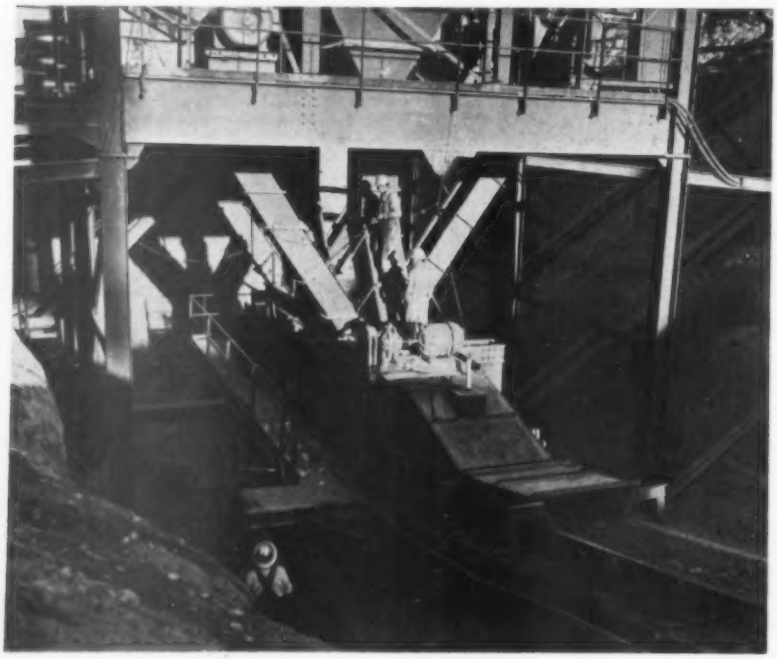
As excavating operations bite deeper into the alluvial deposit lying between mountain ranges, the loading bridge will have to be advanced and re-located, possibly 3 or 4 times during the course of the four-year effort. This will call for the installation of another 54-in. wide belt conveyor section up to 2,000 ft. in total length in the pit.

At the present time the main 54-in. belt conveyor is composed of two flights, or sections, the first being 3,964 ft. long. It transfers to a 3,383-ft. long second section by way of another accelerating conveyor, thence—and similarly—to a 54-in. by 150-ft. radial stacking conveyor which builds the 52,000-ton storage pile. The pile will ultimately be crescent-shaped, about 75 ft. high to the top of the ridge at capacity.



This view of the loading station shows the hopper, the vibrating screens, and the crusher.

A down-under view at the bottom of the pit loading station, showing the enclosed accelerating belt.



There are two 15-ft. diameter Armco steel reclaiming tunnels under the pile, 72-in. wide belts operating in the tunnels and converging at the barge-loading station about 250 ft. distant. These reclaiming belts have a tremendous combined capacity—about 12,000 t.p.h.—and travel at the rate of 550 f.p.m. Nine 60-in. Hewitt-Robins feeders regulate the flow of sand and gravel onto the belts.

Quarry and riprap stone will be loaded into the barges directly by Euclid trucks and skips, without the use of the conveyor system.

Six 55- by 250-ft. steel bottom-dump barges capable of carrying 2,000 cu. yd. each, were fabricated by the Kaiser Steel Co. at Napa, Calif., in sections, shipped by rail, and assembled close to the gravel stockpile area on ways sloping down into the harbor at Promontory Point. They are probably the largest barges ever built. Each is made up of six hoppered compartments. Drop gates in the compartment bottoms are opened and closed by 2½-in. diameter cables. Eight 500-hp. diesel tugboats pull the barges. The pilot's cabin on each vessel is elevated on steel stilts, so that his view may clear the loaded barges at all times. Seven flat-top barges for transporting quarry rock are also to go into service later.

Before the embankment could be started, enough silt, salt, and mud had to be dredged up from the shallow lake portion to provide a stable foundation, as well as a channel for the barges. More than 15,000,000 tons of soft material was thus removed.

The conveyor belting, utilizing rayon-cotton and super-Raynile fabrics, was manufactured by the Hewitt Rubber Division, and the rolls and machinery by the Robins Conveyor Division and Jones Machinery Division in Chicago.

J. H. LAWLOR has been named manager of the Lone Star Cement Corporation's Metropolitan Sales Division in New York. Mr. Lawlor succeeds P. G. BIGLER, vice-president, who retired recently.

How many hundred dollars will this ad save you?

Both K-2 and K-4 links are shown at the left. When wide buckets are used, Kensington's special 4-hole K-4 makes it possible to use one strand instead of two ... *and that single KENKROME chain will be stronger than two ordinary No. 844 chains!*

How much do you spend each year to replace elevator chains and sprockets?

Be sure to include the labor needed to make each change. And don't forget loss in production while your plant is shut down for repairs.

Now figure the money you'd save by using a chain that outlasts ordinary chains 2 to 4 times. That's what you can expect from the improved KENKROME No. 844 Heavy Duty Elevator Chain shown above!

KENKROME is no ordinary steel ... in fact it's no ordinary manganese steel. There's no other steel quite like it.

Addition of special alloying metals under a patented process, plus Kensington's own scientific method of heat treatment, have created this remarkable metal which defies wear by developing surface hardness under impact to better enable it to withstand abrasion. Beneath this continually hardening surface, the metal always remains tough ... better able to withstand shock than are metals that are hard all the way through.

But Kensington's wear-conquering engineers didn't stop with development of the metal itself. They redesigned the physical characteristics of the links. Note, for example, how the extra-heavy 1¼" pin is held in place. Even in those rare instances when a pin *does* break, it can't fall out, for on one end a cotter pin fits over its head, and on the other, a cotter pin passes through both pin and extended boss. Pins have T-head so they may be reversed. They fit link holes that are drifted to close tolerances. Links are extra heavy ... heavier than in any other No. 844 built.

The Renewable Tooth Sprocket is another example of Kensington's improved design. Tooth segments can be replaced by two men during lunch hour ... without even removing the chain! And a new set of teeth costs but a fraction of what you'd pay for a complete one-piece sprocket.

KENKROME Chains and Sprockets are built to fit all standard conveyors and elevators used in rock, gravel, and cement plants. It will pay YOU to *Switch to KENKROME!*

To find what it will cost, just fill in and mail the coupon. You'll be under no obligation.

Other wear-resisting alloyed ORO manganese replacement parts

Elevator buckets that last longer, seldom need replacing.

Crawler treads for all sizes and types of shovels and draglines.

Replacement parts for roll and jaw crushers, ball, rod, tube, hammer mills.

Crawler sprockets for most shovels and draglines.

Kensington STEEL COMPANY

KENSINGTON STEEL CO., Dept. P, 505 Kensington Ave., Chicago 28, Ill.
SUBSIDIARY OF POOR & COMPANY • CHICAGO

☐ Please quote prices ☐ Please ask salesman to call

Chain Information
CHAIN NO. _____ TYPE _____ LENGTH _____
ATTACHMENT NO. (OR 2 BOLT PINS) _____ SPACED EVERY _____ PITCH

Sprocket Information
CHAIN NO. _____ NO. TEETH _____ SHAFT DIA. _____
HUB LENGTH _____ CENTRAL ☐ OFFSET ☐ KEYWAY _____ BUSHED _____

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Expansion . At Bessemer . Limestone .

. new facility erected beside old plant without break in production

By WALTER E. TRAUFFER

Another ON THE SPOT Report

OUTSTANDING among the many cement plant expansion programs recently completed or under way is that of the Bessemer Limestone and Cement Company at its Walford Station, Pa., plant. In the fall of 1956 this company put in operation alongside its existing plant an essentially new plant with a capacity of 4,000 bbl. daily. This firm, like so many others, was practically forced to enlarge to meet the growing demand and to maintain its position in its market area.

With a plant that was old but still capable of economical production, it was imperative that this new capacity be added without interruption to the production of existing facilities. This was done, after careful planning, by erecting the new kiln and other equipment nearby, but almost entirely separate from the existing facilities. With this arrangement, additional kilns, mills, etc., can be added later, again without interruption to production. It is also possible to shut down the old

A view of the new kiln at Walford Station, seen from the feed end, with the new raw- and finish-grinding mill building at the left.

plant whenever reduced operation is necessary, and eventually it can be dismantled without any effect on the new plant.

This newly completed facility consists basically of a raw-grinding mill, a kiln with a unit coal pulverizer and clinker cooler, a finish-grinding mill with air separator and cement-cooling dust collector, and a new set of under bulk-loading silos. The same quarry, crushing department, and conveyors are being used. The other tie-ins to the old plant are for slurry blending and cement storage in the older silos. The new plant is rated at 1,350,000 bbl. of clinker annually, supplementing the annual 1,650,000-bbl. clinker capacity of the old plant. The new plant is making Type I, Type Ia, and Type III portland cements. The old plant continues to make the above types as needed, and also produces mortar cement and portland blast-furnace slag cement.

History The Bessemer Limestone and Cement Company was incorporated in 1887 and for some years produced mainly limestone for fluxing purposes. About 1901 it was found that the shale overburden over the deposit was suitable for brick manufacture, and a brick plant was built which was later enlarged. In 1917 the brick interests were sold, but the shale is still sold for that purpose.

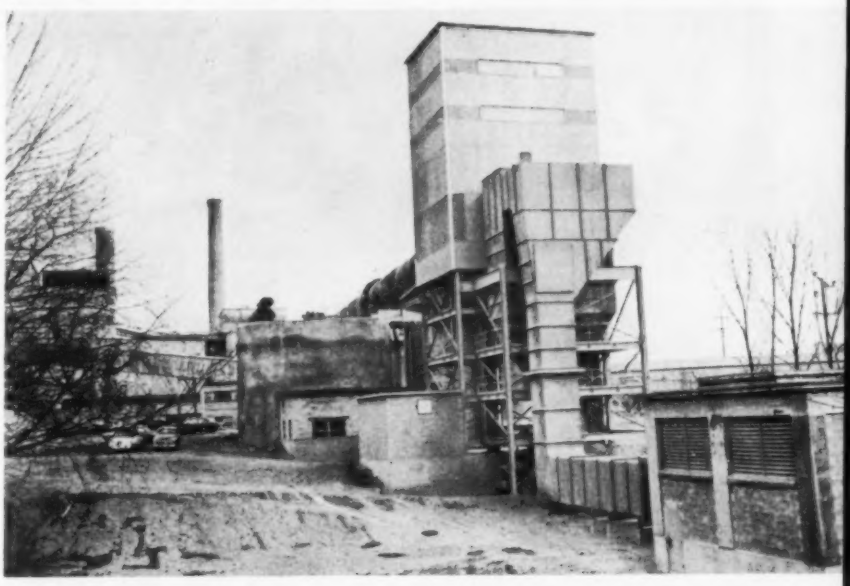
Eventual construction of a cement plant had long been planned, and actual construction was begun in 1919. Late in 1920 the original 3,000-bbl.-per-day wet process plant was in operation. This facility had three 10- by 175-ft. and 8- by 60-ft. rotary kilns. In 1930 Oliver slurry filters were installed, and the kilns were made straight 10- by 235-ft. by replacing the 60-ft. sections. This change increased capacity to 4,800 bbl. daily. Unit coal pulverizers were installed in 1934-5. In 1940-1 chain systems replaced the slurry filters. In 1930 an 8- by 45-ft. 4-compartment finish mill was installed, and air separators were added in 1936 and 1951. In 1954 the 8- by 45-ft. shell was replaced by a 7- by 45-ft. 3-compartment shell.

The rapid increase in the demand for cement hastened the decision to further expand capacity, and in 1954-5 the W. R. Bendy Engineers made a study to determine the most practical means of doing this. As a result, it was decided to build a new plant alongside the old one, and on June 14, 1955, ground was broken. Clinker was produced in August, 1956, and the first cement was shipped the same month.

Bendy Engineers did the general layout and flow design. The Macdonald Engineering Company did the detailed plant and the concrete design, the construction, and the equipment installation. Bessemer's operating and engineering staffs cooperated in all this work.

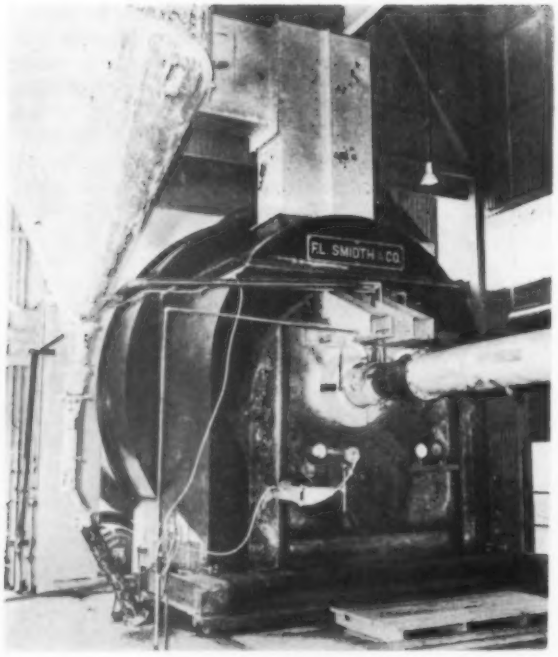
Raw Material Processing Little change was necessary in the quarry and the old crushing plant to take care of the increased demand. As the crushing equipment was designed for a high percentage of flux stone, however, additional fine crushing capacity will be required. No change was made in the stone storage bins, but conveyors were added to feed to the new plant. The same crushing setup is now also used for the shale. A crane storage building for all materials—stone, clinker, and coal—will be built later.

At present the raw materials—limestone and shale—are fed to bins with capacities of 255 and 155 tons, respectively. Merrick Feedoweights

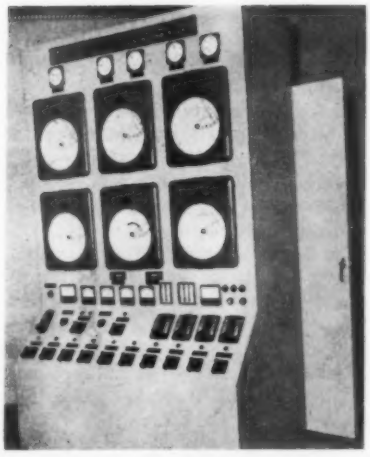


This view of the Bessemer plant additions shows the new kiln, the slurry feed tanks, the stack dust collector and the draft fan building (right) ahead of the stack. The old plant and stacks are in the background.

Below: An interesting arrangement of conveyors for handling coal to the burner building and raw material to the mill building. The old storage building is at the left.



Left: The kiln hood with the cyclone (left) for coal mill drying air. Note the wall construction, which eliminates dust leakage at the seal ring.



Right: The compact kiln control board is in an air-conditioned room. Standard-size recorders are used, but all other instruments are miniature in size.

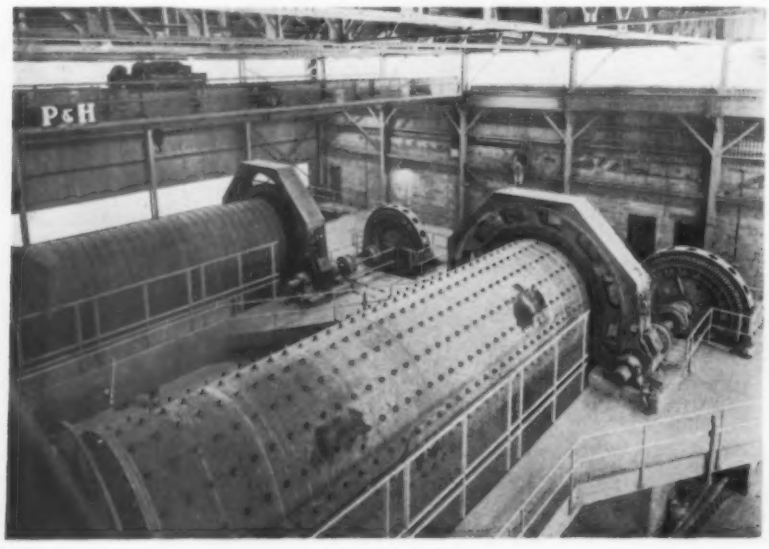
with variable-speed Dynamatic drives, when once adjusted for the desired mix, can be controlled as a group, and discharge from the bins to a drag chain conveyor.

This conveyor feeds the 10- by 35-ft. Allis-Chalmers 2-compartment Compeb mill, which is driven through a gear and pinion at 18.1 r.p.m. by a 1,500-hp. Allis-Chalmers synchronous motor operating at 200 r.p.m. The mill is equipped with 2½-in. standard Lorain liners in the first compartment and 2-in. in the second. The 81,000-lb. ball load in the first compartment consists of 20 percent of 4-in., 40 percent of 3-in., and 40 percent of 2-in. balls. In the second compartment the 197,000-lb. load consists of 50 percent of 1¼-in. and 50 percent of 1-in. balls. U. S. Steel forged steel balls are used.

The mill is in a closed-circuit system which, as used, is more of a scalping arrangement. This is operated so as to grind close to open circuit, with only a small amount of return. The slurry from the mill flows to one of two Wilfley pumps and thence to a pair of 4- by 6-ft. Tyler Ty-Rock 1-deck screens. These units have 50-mesh Ton-Cap wire cloth with .011-in. openings. Oversize flows back to the mill feed. The slurry through the screens flows to a sump, from which one of another pair of 4-in. Wilfley pumps transfers it to slurry basins. This slurry has a fineness of 85 percent through 200 mesh, 95 to 96 percent through 100 mesh and 100 percent through 50 mesh. It is produced at the rate of about 200 bbl. per hour and has a moisture content of 36 to 37 percent.

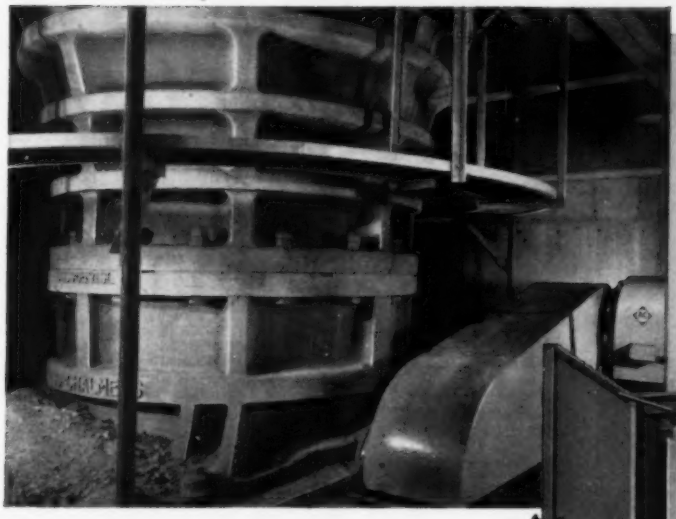
Slurry Handling The slurry is pumped either to the kiln feed tanks of the new plant or to the storage tanks at the old plant. The raw mill capacity at the new plant exceeds kiln requirements; and rather than to shut down the raw mill at frequent intervals, the excess slurry goes to the old plant. When the new plant is enlarged, slurry storage tanks and larger pumps will be added. The raw mill mix is held as nearly as possible to feed, but when necessary, correction can be made from the correcting tanks at the old plant.

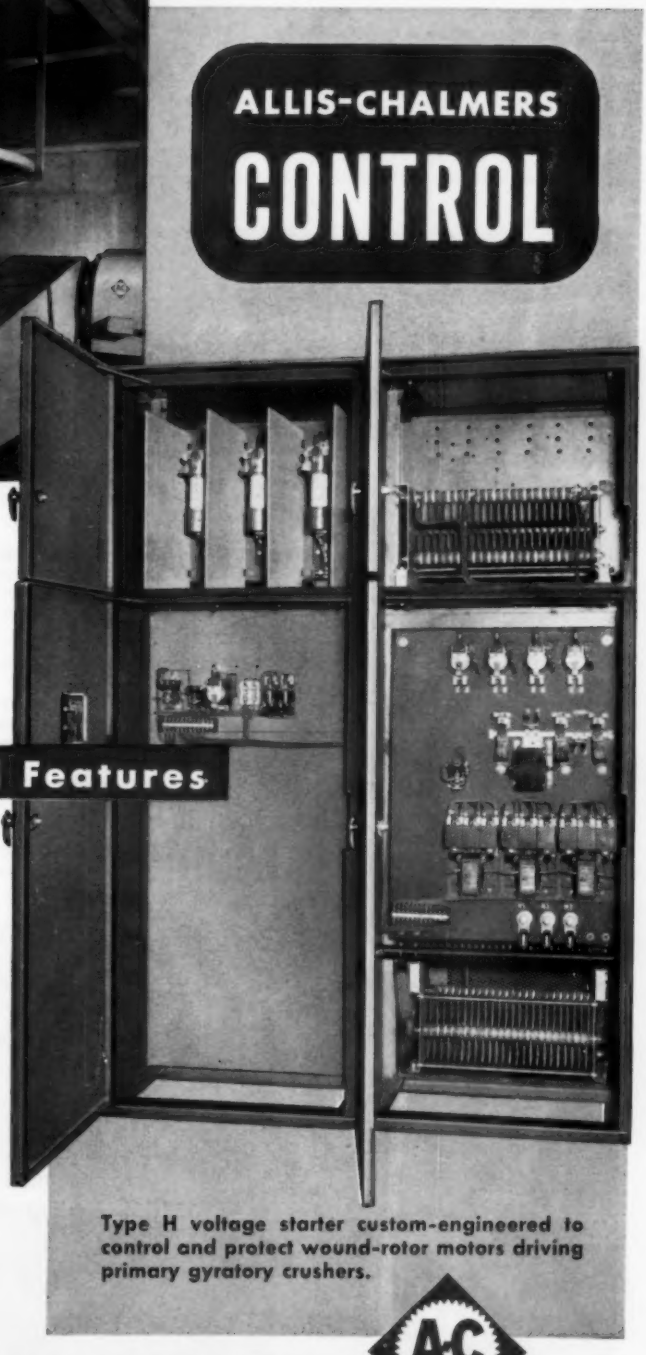
The two feed tanks are 40 ft. in dia. by 32 ft. high and each holds 4,000 bbl. They are equipped with Dorr mechanical-and-air agitators. The tank walls were built by the continuous slip form method, and the Preload Corporation provided prestressed wire wrapping covered with Gunite. The Preload seal between the bottom of the 8-in. thick concrete tank wall and the concrete base consists of a rubber strip of dumb-bell-shaped cross-section. The bottom half of this seal is imbedded in the base, and the wall is poured around the top half.



This view in mill room shows the raw mill (right) and the finish mill and their 1500-hp. motors. Ample space has been left for future expansion.

custom control cuts crusher downtime





As a leading builder of gyratory crushers for more than 75 years, Allis-Chalmers has expert knowledge of crusher control problems . . . and how best to solve them. Special controls for crushers, developed by Allis-Chalmers, offer important operating and protective features that minimize costly downtime . . . assure continuous, dependable operation.

Control Features

Motor Overload Protection
Two separate sets of thermal overload relays... one set sounds remote alarm horn and energizes warning light at slightest sign of overload. If warning is not heeded, second set of relays stops motor when temperature reaches danger point.

Maximum Torque Starting
Control permits maximum torque starting, when desirable. Maximum torque starting often clears crusher jams.

Jog-Reversing Controller
This feature permits rocking to clear jam.

Time-Delay Undervoltage Relay
Crusher rides through momentary voltage dips.

Stall Protection
Motor is disconnected by instantaneous relay when current is greater than normal peak load.

For detailed information, contact your A-C representative, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin.

Type H voltage starter custom-engineered to control and protect wound-rotor motors driving primary gyratory crushers.

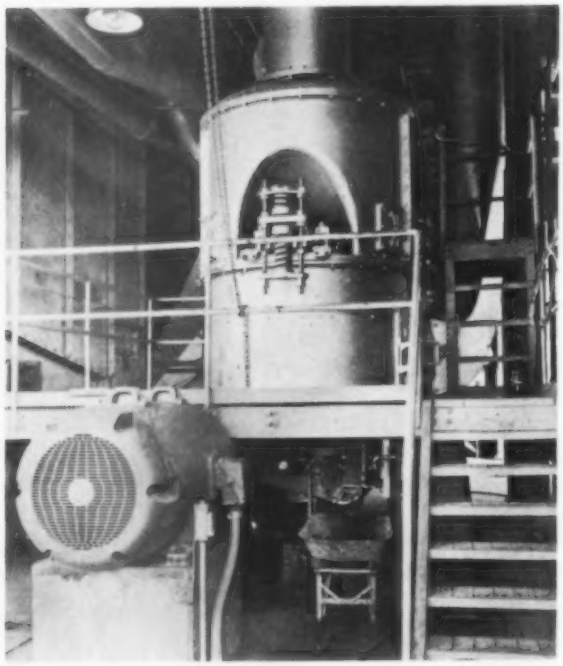
ALLIS-CHALMERS

A-5206

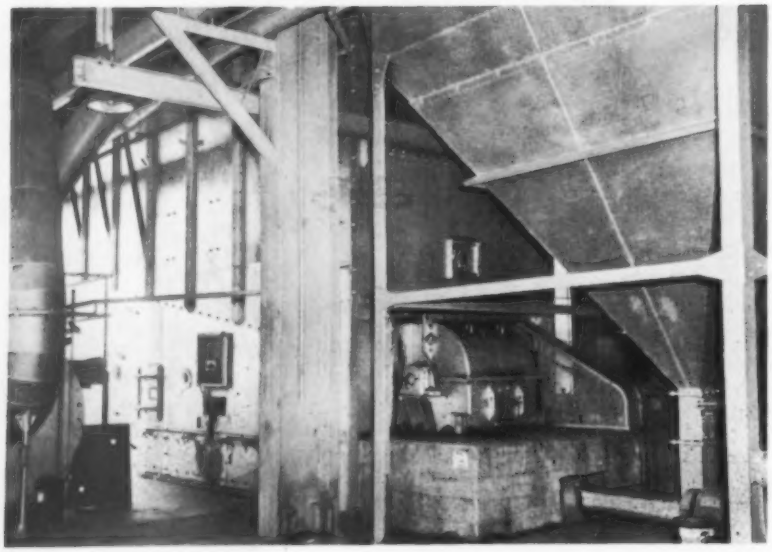
One of two 4-in. Wilfley pumps feeds from these tanks to a Traylor ferris-wheel kiln feeder, from which the overflow is returned to the tank by gravity. Normally, when collector dust is being added, the slurry goes to a pug mill mixer; however, it can be by-passed direct to the kiln feed spout.

Burning The 12- by 450-ft. F. L. Smidth kiln is driven through a single helical gear and a Falk speed reducer by a 200-hp. Allis-Chalmers d.-c. motor. It is being driven at the rate of 60 r.p.h., but the design range is 45 to 80 r.p.h. A Ward-Leonard control system synchronizes both the slurry and dust feeder motors with the kiln motor. The auxiliary drive consists of a 50-hp. Hercules gasoline engine and a speed reducer.

The kiln is mounted on six supports and has an all-welded shell which is ⅞ in. thick, except under the tires, where it is 2½ in. thick. It has a slope of 7/16 in. per foot. At the feed end there is a Smidth plate seal ring and a feed chamber; and at the discharge end there is a plate seal and an air-cooled nose ring.



Left: The direct-firing coal pulverizer is located under the kiln room floor.



Below: The 7- by 44-ft. inclined-grate clinker cooler with the breaker, dust hopper, and conveyor (right).

In most kiln installations the dust leak at this seal ring, although small, is a nuisance because the dust settles on the burner floor and controls. Here it is eliminated by a special type of wall construction. The rotating end of the kiln and the seal ring are isolated from the inside of the building by an inner wall welded to the kiln hood, thus diverting the dust outside the building.

The front of the hood is mounted on rollers. Near the feed end of the kiln there is a heat-exchanging system 60 ft. long. This consists of 28 sections of ¾-in. dia. special chain attached to 32 supporting rings. General Refractories lining predominates in the kiln. Beginning at the feed end, there is 100 ft. of 6-in. wear-resisting block, then 35 ft. of 40 percent alumina brick, 160 ft. of 6¾-in. Armstrong insulating brick, 65 ft. of 45 percent alumina brick, 20 ft. of 70 percent alumina brick, 66 ft. of Steelclad Ritex basic brick (in the burning zone), and 4 ft. of 70 percent alumina brick. The inlet hood is lined with firebrick. The firing hood has an insulated, monolithic plastic lining which was cast in place with the necessary refractory anchors and clips.

Clinker is discharged from the kiln to a 7- by 44-ft., 4200-bbl.-per-day capacity Fuller inclined grate cooler. This unit has three compartments and a clinker breaker and reduces the temperature of the clinker from 2500 deg. down to 140 deg. F. A 125-hp. fan provides air through separate ducts to the first and second chambers of the cooler, and the third chamber gets air from the second by means of a damper. Hot air from the first compartment is secondary air for the kiln. Air and dust from the other two compartments are drawn through a Buell L R collector to a vent stack. The collected dust and any material dropping from the grates are discharged on the same drag chain conveyor as the cooled clinker.

The kiln is equipped for both coal and natural gas firing, and gas was used during the first month of operation while the coal department was being completed. It is the intention to use gas only in emergencies. Gas gives very even burning conditions, but it is more expensive than coal.

At the new coal department a temporary truck unloading hopper and conveyor to the coal crusher is being used. A 350-ton coal crusher feed tank with a Jeffrey vibrating feeder has been built as a part of the future crane storage. The crusher is a Pennsylvania ring mill driven by a 50-hp.

motor. A belt conveyor feeds from the mill to a Webster bucket elevator, from which it can go back to the 350-ton tank (temporarily being used only for storage) or to a belt conveyor feeding to the 150-ton coal mill feed tank. A Merrick Feedoweight supplies coal to the Raymond No. 533A bowl mill under the burner floor.

The mill is designed to deliver 18,000 lb. per hr., ground to a fineness of 80 percent through 200-mesh. Drying air for this mill is drawn at 450 deg. F. from the top of the kiln hood through a cyclone and delivered at 180 deg. F. to the burner pipe. Various types and arrangements were tried before the present water-cooled pipe was selected. The pipe extends 2 ft. inside the hood wall, but not inside the kiln. This brings the burning zone within 6 ft. of the end of the kiln.

Kiln exhaust gases go through a short duct to the Western Precipitation Corp. Type 24 IH Multiclone dust collector. This consists of 45 cyclone tubes arranged in nine rows of five tubes each longitudinally. The hoppers are extra large, so that no additional storage bins are needed, and rotary floating seal valves synchronized with the kiln discharge the dust at any desired rate for continuous feed back into the kiln. A screw conveyor feeds the dust to a bucket elevator to the pug mill which mixes it thoroughly with the slurry before it goes into the kiln.

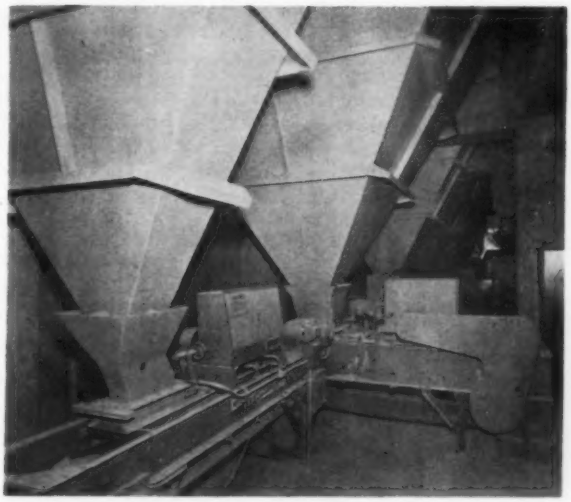
The gases from the Multiclone collector go *via* a louvre damper to the Buffalo 160,000 c.f.m. draft fan, which is driven through V-belts by a 350-hp. wound-rotor motor. An Allis-Chalmers adjustable-speed pulley makes it possible to adjust the fan capacity. The gases are discharged to atmosphere through an 11-ft. I. D. by 220-ft. Rust concrete stack which has a hard-burning brick lining. This stack is large enough to serve a future second kiln.

The kiln was designed for a capacity of 4,000 bbl. daily, with 1,000,000 B.t.u. fuel consumption. It has already met the capacity figure, and company officials feel it will do even better after longer operation. It is now using about 85 lb. per bbl. of 12,500 B.t.u. coal. This coal is from Pennsylvania strip mines and has 10 to 15 percent ash and a reasonably low sulphur content. The temperature in the kiln burning zone is held at 2,700 to 2,750 deg. F. by optical pyrometer, and at the feed end at 600 to 650 deg.

In operating the kiln the aim is to keep a constant hood draft—about minus 0.05 in.—as well as constant feed end temperature and gas analysis (by Bailey combustible and oxygen analyzer).

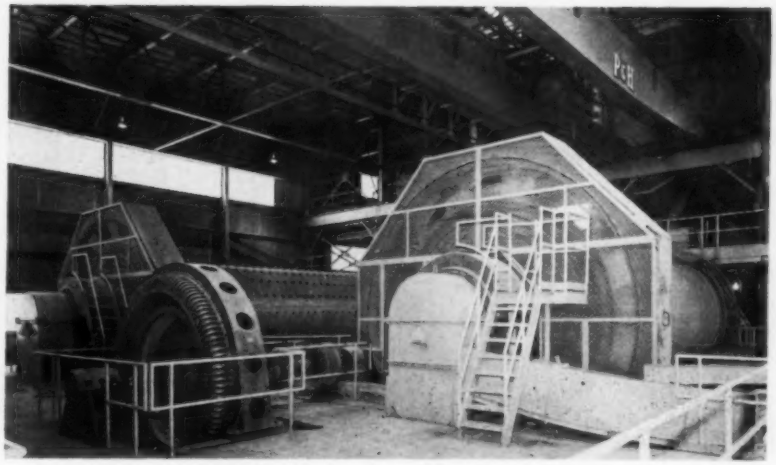
The Bailey main control board is in an air-conditioned dustproof room on the kiln floor. It is very compact in spite of the fact that standard size recorders are used. Indicators, etc., are Bailey Miniline. At the top of the board is the alarm and indicating panel. In the second row are ammeters for draft fan, kiln, cooler, vent fan, etc. The third row has the burning zone and feed end temperature recorders, the coal mill inlet and outlet temperature recorders and speed recorders for the kiln, and the slurry and dust feeders. In the fourth row are recorders for coal consumption, cooler vent stack temperature, firing hood draft, cooler throat differential pressure, and the gas analyzer. Slurry and dust feeder counters are in the fifth row. The sixth row has speed indicators for various drives, and indicators for the feed end and kiln hood draft and undergrate pressures in the three cooler compartments. In the seventh row are speed indicator knobs for the feeders and Bailey pneumatic controls for the dampers, cooler, vent stack, etc., and the louvre damper position indicator. The eighth row has starting buttons for all motors in the circuit.

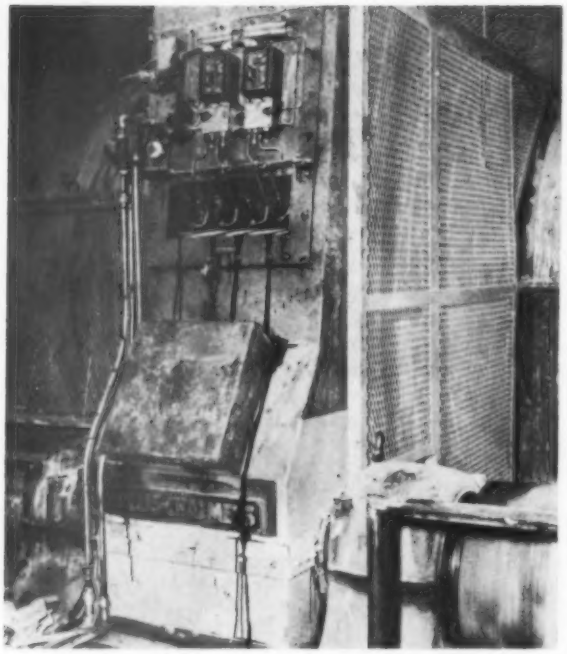
Finish Grinding The clinker from the cooler is carried by a drag chain conveyor to a bucket elevator, and two belt conveyors in series now carry it direct to the finish mill feed bins. There is a 390-ton concrete bin for clinker, a 145-ton bin for gypsum, and a 0.5-ton steel bin for various grinding aids, air-entraining agents, etc. Merrick Feedoweights, under the clinker and gypsum bins, and a Merchen scale feeder by Wallace & Tiernan, under the additive bin, feed these



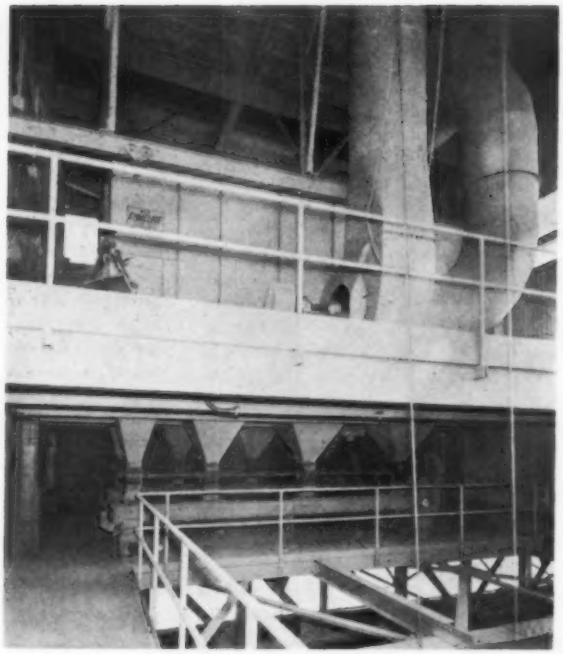
Left: The weighing feeder-conveyor, which can be adjusted to feed any desired raw mix to the mill.

Below: Another view in the mill building, with the raw mill (left) and finish mill (right). The separator is in the background.





The automatic lubricating system on one of the grinding mills.



This air-cooling 21,000 c.f.m. dust collector follows the finish mill separator.

materials in the desired proportion to a drag chain conveyor.

The conveyor discharges direct into the 10- by 31-ft. Allis-Chalmers 2-compartment Compeb mill, which is driven through a gear and pinion at 18.1 r.p.m. by a 1,500-hp. Allis-Chalmers synchronous motor operating at 200 r.p.m. The 32½-ton load in the first compartment consists of 5½ tons of 3½-in., 11 tons of 3-in., 9 tons of 2½-in. and 7 tons of 2-in. Coates forged steel balls. The 95-ton load in the second compartment consists of 47 tons of 1½-in. and 48 tons of 1-in. Ni-Hard balls.

This mill is in closed circuit with a separator. cooling is done by venting the separator by means of a dust collector. The mill discharges through a long Fuller-Huron Airslide, which also serves as a dedusting duct, to a bucket elevator.

(*Continued on page* 168)

Left: A bulk truck being loaded on the scale under one of the three rows of silos.

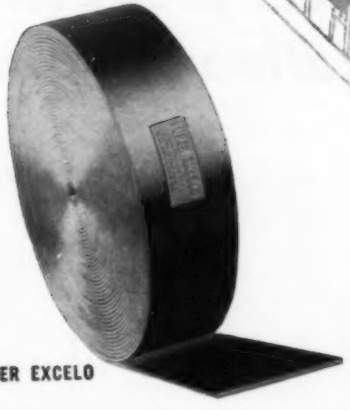
The new bulk-loading cement storage silos, which load underneath. Special scales weigh the cement during loading.

moving 3,000 tons

OF 4" ROCK EVERY DAY

Installation at Gary Bros. Crushed Stone Co., Bowling Green, Ky.

everything new but the Republic Conveyor Belt



SUPER EXCELO

RECORD MAKER

Everything is new about this Southern crushing plant except the primary conveyor belt. In use since 1952, the Republic Record Maker Belt showed so little wear that it was installed as the Primary Crusher Belt in this new plant.

Through John Bouchard & Sons Co., Nashville, Tenn., the Republic Rubber Distributor who serviced them, the customer comments—"Best service we have ever had from any belt of any manufacture. We like the belt so well we will use this grade in another plant of ours."

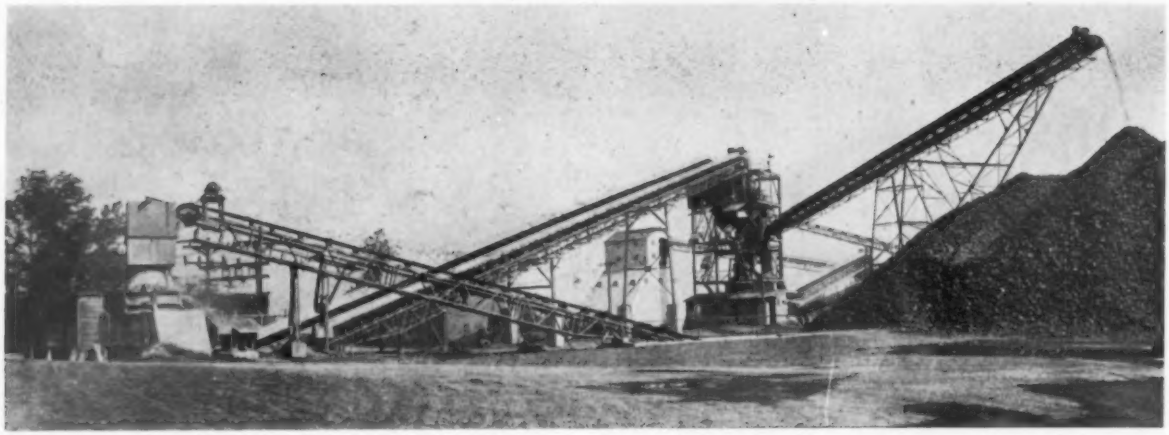
For severe service conditions, Republic makes two grades of conveyor belting—Super Excelo and Record Maker. Super Excelo handles any type of sharp or highly abrasive material. Record Maker is recommended for moderately abrasive materials.

Write for Republic's complete catalog on Conveyor or Elevator Belting, or contact the Republic distributor nearest you. You will find his name under Rubber Products in the Yellow Pages of the telephone book.

REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

INDUSTRIAL RUBBER PRODUCTS



A general view of the Newington stone crushing plant of the Edward Balf Company, which produces over 800,000 tons yearly.

EDWARD BALF COMPANY'S

Newest Crushed Stone Plant--

Another step in pioneer producer's modernization program

By ROY L. PECK

One of the two 2½-cu. yd. diesel shovels loading a 20-ton capacity end-dump truck for the haul to the primary crusher.

Another ON THE SPOT Report

EDWARD BALF COMPANY, of Hartford, Conn,. established in 1878, has a 75-year history which parallels that of the city in which it operates. From its meager beginnings of cellar excavations by hand and cartage of materials and freight by oxen and horses, the company's operations have grown steadily to a position of dominance in the production of bituminous concrete pavement and trap rock aggregates.

The main crushed stone plant at Newington has an annual capacity of over 800,000 tons; the company also owns and operates four concrete plants having a total capacity of over 600 cu. yd. of ready-mixed concrete daily; the three bituminous concrete plants produce over 100,000 tons yearly. More than 50 motor vehicles, including 14 of the largest-capacity truck mixers made (7½- and 8½-cu. yd.), are used in the greater Hartford area. The latest in equipment—power shovels, mechanical loaders, rollers, graders, paving machines, and other items help to maintain the highest standards of production.

We are informed that the expansion plans for the coming year include another 3-ton asphalt plant, and a sizable addition to the ready-mix truck fleet; ultimately a complete modernization of the Huyshope Avenue concrete plant will be undertaken. These proposed projects are dictated by the company's basic policy to keep abreast of the demands of its customers.

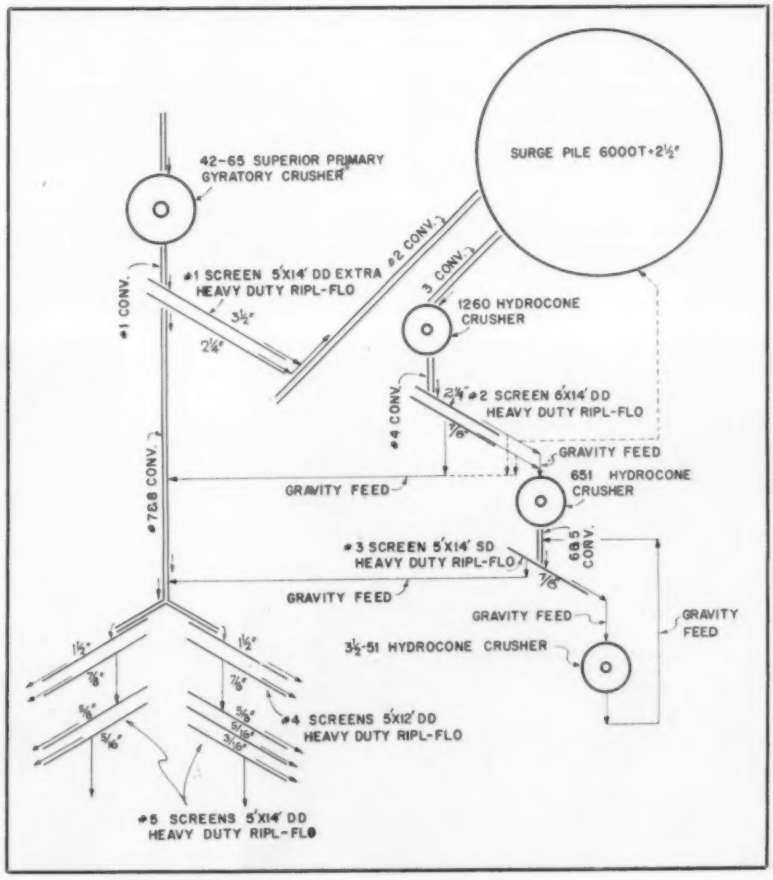
Edward Balf, the founder of the company, was compelled in connection with his first excavating endeavors, to extend his field of operations. He gradually added an extensive cartage business, machinery hauling, street watering, and finally, the production of a constantly increasing volume of crushed stone, the latter used both for his own expanding asphalt paving work and for general sale to contractors. To illustrate the volume of even the early operations, it is related that the company once owned and used some 340 horses. Later, for watering the streets of Hartford, the horse-drawn equipment was replaced with special trolley tank cars.

Quarrying operations were initiated in 1909, with the purchase of land and the erection of a crushing plant in the town of Tariffville, in upper central Connecticut. The output was shipped by rail to the district around Poughkeepsie, N. Y. Later a tract of land was purchased in Newington, a suburb southwest of Hartford, where a stone-crushing plant was erected. At the outset the stone was delivered to Hartford customers by Balf's trolley company in trains of three small dump cars.

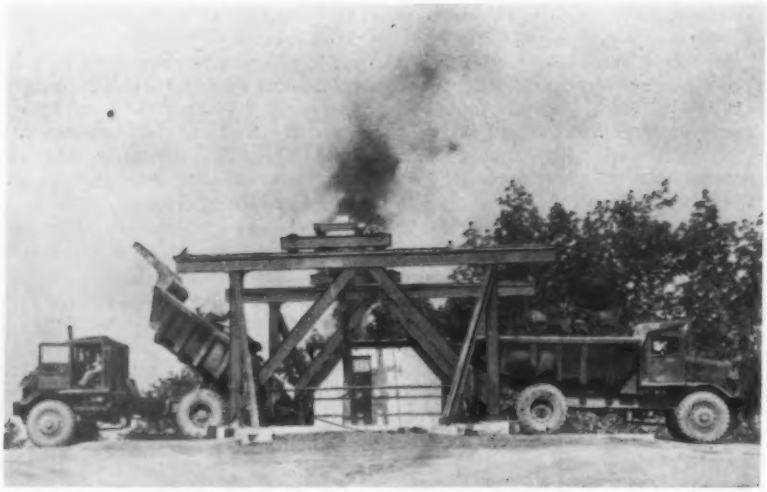
In extending his raw material sources, Mr. Balf had purchased the Hartford Trap Rock and Supply Company and later bought an interest in the Southern New England Paving Company. In 1913 the three companies merged, to form the Edward Balf Company as it exists today, and since that time the company has installed practically all of the asphalt pavement or bituminous concrete work in Hartford; it has also produced the majority of the trap rock aggregate used in the adjacent area. The subsequent growth of the city has all but surrounded the stone plant. As evidence of Mr. Balf's acumen, it is recorded that he operated the first power-driven shovel used for excavation work and the first motor-driven truck for construction in Hartford.

In 1955 the modern stone crushing plant was erected on the Newington property, replacing the two old outmoded plants installed between 1913 and 1940. In the main, the new facilities included one primary and three reduction crushers, seven scalping and sizing screens with the necessary supporting towers, and some 1,400 lineal ft. of belt conveyors, to handle the crushed stone from the crushers to the 6,000-ton surge pile, the screens, the storage, and bins. The surge pile is considered an important segment of the new layout. It contains an ample supply of stone (from minus 6-in. to plus 2-in. sizes) as a safety factor in case of plant stoppage due to mechanical failures in the main plant or in the shovel equipment.

The maximum output of the new plant is 400 t.p.h. Based on an 8-hour day and a 25-day month for 10 months per year, annual production should reach 800,000 tons of five gradings of crushed stone, including 2½-, 1½, ¾-, ½-, and ⅜-in. sizes normally used. Larger or smaller gradations can be furnished



Schematic flow diagram showing the positions of the primary crusher and three reduction crushers, the seven scalping and sizing screens, and belt conveyors and gravity feeds handling movement of materials.



Two trucks simultaneously dumping 20-ton loads of rock into the primary crusher, which has a capacity of 500 t.p.h. A 5-ton hoist above handles extra-large pieces of stone.

upon request. The new crushing facilities at the Newington plant compare favorably with any similar installation in the New England states, and the output of the plant can, without question, meet any demand which the Greater Hartford area can place upon it.

In the quarry area overburden is sparse earth, sand, and gravel over most of the area worked for the last 40 years. Depth of the present working face is about 175 ft., with the quarry floor fairly level, as seen in the accompanying illustrations. The average haul to the primary crusher from the present working face is about 1,000 ft.

Drilling equipment consists of Schramm and Reich rotary drill rigs and compressors. Holes 6 in. in diameter are sunk at about 24-ft. spacing, with an average 30-ft. burden, to depths of 35 to 40 ft. off the floor of the quarry. The total depths range from 145 to 160 ft. from the top of the stone. Holes are loaded with Hercules Hercomite and Gelanite up to the stemming of 10 ft. Primacord fusing with short-delay caps are used. Snake holes 4 in. in diameter and about 35 ft. long are drilled at 10-ft. spacing, to take the pinch off at the bottom of the face.

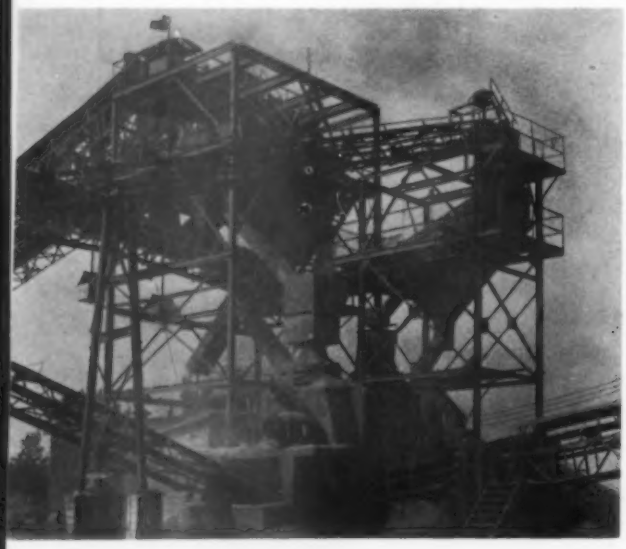
A typical shot consisting of 2,125 lb. of Gelanite and 4,650 lb. of Hercomite (total load of 6,775 lb.) brought down 27,175 tons of trap rock, for an average yield of 4.01 lb. of explosive per ton of raw material. A Marion Model 32 steam shovel, carrying a 6,000-lb. dropball, is used for reduction of pieces of rock exceeding the size of the primary crusher opening. This particular shovel has been in operation for the last 27 years. Prior to its present light duty it was used for loading raw rock into the trucks.

Electric power for equipment use and lighting comes into the property from the lines of the Hartford Electric Light Company at 3,500 volts. Three transformers step down this current to the 440-, 220-, and 110-volt power required by the different equipment units and lighting circuits.

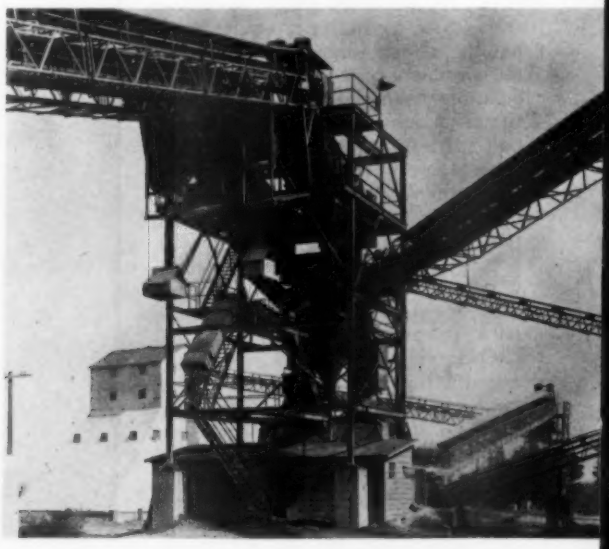
Two 2½-cu. yd. Lima diesel shovels were installed in the quarry, one in 1950 and the other in 1956, to load the rock into the four 20-ton capacity Euclid end-dump trucks used for the haul to the primary crusher. A structural steel framework above the primary crusher supports a 5-ton Shaw Box hoist running on a cross track which handles any large pieces of rock at this point.

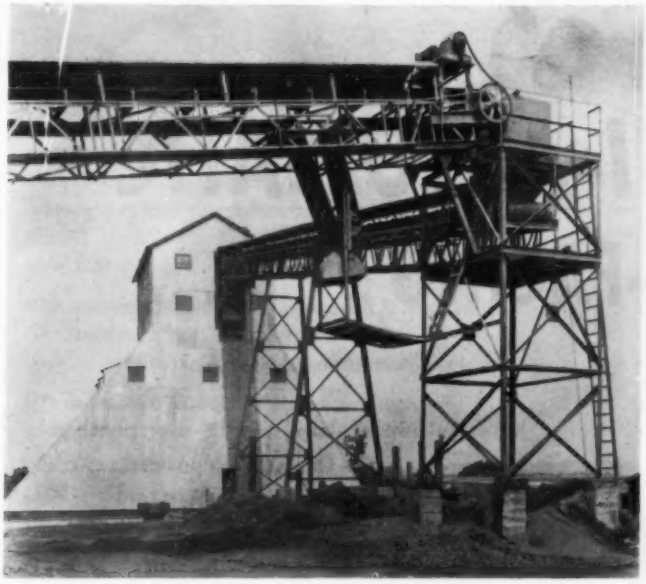
The primary crusher is a Model

The secondary reduction crushing plant, with the crusher units (foreground and background), transfer conveyors No. 5 and 6 (left), the single-deck screen (right), and No. 2 conveyor (just above the crushers).



The main tower, with scalping screens No. 1 and 2 (center), conveyors No. 1 and 4 (top left), No. 2 conveyor (upper right), the secondary crushers (above the shed), and conveyors No. 5, 6, 7, and 8 (background).





Above, left: The transfer tower, with the main screen house (background) and conveyors No. 7 (left) and 8 (connecting).

Above, right: The secondary crusher unit receiving material from the surge pile via conveyor No. 3 (upper right), and discharging onto conveyor No. 4 (lower right).

42-65 Allis-Chalmers Superior gyratory, with a 5-in. o.s.s., and 1-in. throw. It is driven by a 300-hp., 720 r.p.m. wound-rotor motor. This crusher has a capacity of 500 t.p.h. Rock can be dumped into it from both sides simultaneously.

The accompanying table furnishes data on the nearly 1,400 lineal ft. of belt conveyors used in the plant for movement of materials at various stages. All four crushers and seven screens, as well as the motors used in connection with conveyor drives, were furnished by Allis-Chalmers. Link-Belt reduction units were used throughout on belts.

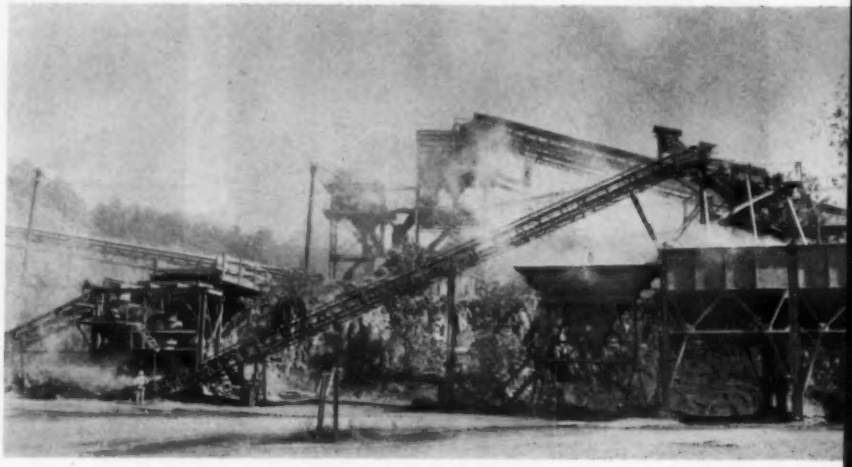
Belt Conveyor Data

No.	Length (in ft.)	Width (in in.)	Capacity (t.h.p.)	Motor (hp.)
1	301	42	500	60
2	137	36	350	25
3	232	30	275	20
4	227	30	275	30
5	85	24	262	10
6	84	24	262	10
7	166	36	425	25
8	156	36	425	25

The primary crusher discharges to conveyor No. 1, which carries material to scalping screen No. 1, a 5- by

(*Continued on page* 150)

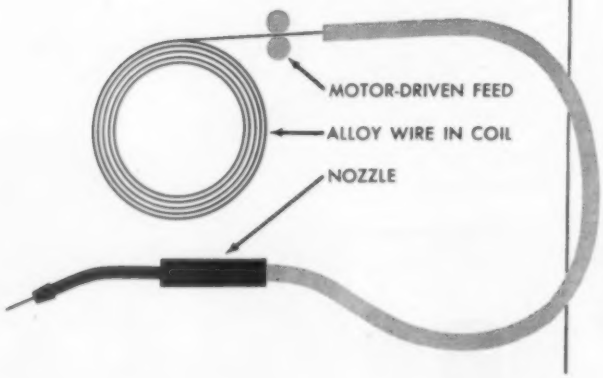
The screen tower and the finished aggregate bins, with conveyors No. 8 (center) and 7 (right) taking materials through the transfer tower (background).



The auxiliary plant for re-crushing special sizes of aggregates.

WHAT IS *SEMI-AUTOMATIC* HARD-FACING?

Here is one of industry's newest maintenance tools used to radically reduce hard-facing costs. It is simple, highly versatile and can be installed at moderate price.



Semi-automatic hard-facing is a process which combines the high deposit rates of automatic welding with the positioning and setup convenience of the manual method. It utilizes a complete series of Stoody fabricated tubular wires containing alloys that meet all hard-facing requirements. These wires, supplied in layer wound coils, are mechanically fed to the nozzle by the semi-automatic welding machine. The weldor merely directs the arc as the metal is deposited on the work, the machine automatically starting the wire feed when the arc is struck, stopping it when the arc is broken. Numerous advantages result when rebuilding and maintaining equipment in all types of heavy industry.

Repointer welded on with Stoody Nickel Manganese and entire tooth hard-faced with Stoody 121

Roll brought up to size with Stoody Nickel Manganese and corrugations rebuilt with Stoody 100

HIGH WELDING SPEEDS—Two to four times faster than the manual method at correct welding amperages, semi-automatic hard-facing effects enormous savings in time. Penetration of the base metal and dilution of the deposit are reduced, with lower heat input, all highly desirable features of this process.

FULL VISIBILITY—No submerging flux is required; the weldor enjoys complete visibility of the weld at all times. Flux dams are unnecessary.

NO STUB END LOSSES—Wires are supplied in continuous coils. There is no stub end waste nor time lost in changing electrodes.

SEMI-AUTOMATIC MACHINES—Now supplied by a number of manufacturers, all can be used satisfactorily with Stoody semi-automatic wires with minor conversions consisting of wire guides, nozzle and nozzle tip. Conversion kits are available from all Stoody distributors.

WHERE CAN SEMI-AUTOMATIC HARD-FACING BE ECONOMICALLY USED?—In general, almost any work now hard-faced manually can be completed faster and cheaper semi-automatically with deposits having wear resistance usually superior to manual electrodes of similar analysis. The illustrations are typical of current semi-automatic applications.

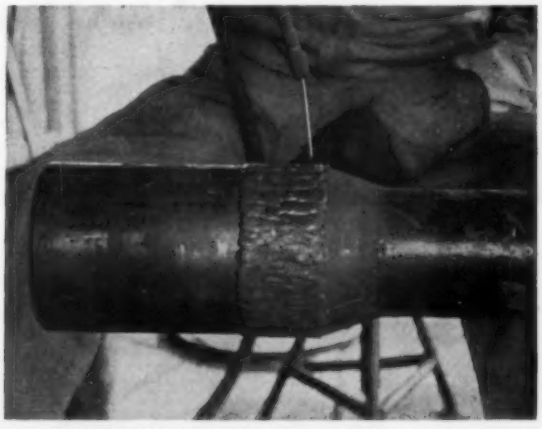
Write for circular. Contains a full description of present Stoody semi-automatic wires and typical applications.
Available from your Stoody dealer.
Check the "Yellow Pages" of your phone book or write direct.

Dredge pump casing hard-faced with a combination of Stoody 121 and Stoody 100

SEE OUR BOOTH NO. 144, WELDING SHOW
PHILADELPHIA, APRIL 9-11

Shovel track pads rebuilt with Stoody Nickel Manganese

Mill hammers brought up to size with Stoody Nickel Manganese, using copper form, then hard-faced with Stoody 100



Tool joints hard-faced with Stoody 130 or Stoody 100

STOODY COMPANY
11971 EAST SLAUSON AVENUE
WHITTIER, CALIFORNIA

Edward Balf Co.

(*From page* 147)

14-ft. double-deck, extra-heavy-duty Ripl-Flo inclined vibrating screen. The cloth on the upper deck is 3½ in. and on the bottom 2½ in. This screen is driven by a 15-hp., 1,750 r.p.m. type APZT motor.

Plus 3½- and 2½-in. materials off these decks go by conveyor No. 2 to the surge pile, while minus 2½-in. material through the lower cloth goes by conveyor belts No. 7 and 8 to the storage bins. There is an arrangement of chutes and gravity feed so that the minus 3½-in. and plus 2½-in. materials can be sent from these belts, if desired, to the secondary reduction crusher.

No. 3 conveyor belt operates from under the surge pile, in the tunnel below the 6,000-ton plus 2½-in. storage. Feed to this belt passes through three openings below which Syntron feeders are installed. The belt takes material to the secondary reduction unit. This is a Model 1260 Hydrocone crusher with 1½-in. c.s.s. and 1¼-in. throw. It is driven by a 250-hp., 720-r.p.m. motor. The crusher discharges to conveyor No. 4, which moves material to screen No. 2, a 6- by 14-ft. double-deck heavy-duty Ripl-Flo driven by a 10-hp. 1,750-r.p.m. motor. This unit has 2¼-in. top cloth and ⅞-in. on the bottom.

Gravity feed takes plus 2¼-in. material off the top deck to the surge pile, and plus ⅞-in. to the first of two tertiary crushers. Minus ⅞-in. and plus 2¼-in. material goes by gravity feed to the screening tower and respective storage bins. The first tertiary crusher is a Model 651 Hydrocone, having ⅞-in. c.s.s. and 1¼-in. throw. It is driven by a 200-hp., 900-r.p.m. motor.

This crusher discharges onto conveyor belts No. 6 and 5, which take the material to screen No. 3, a 5- by 14-ft. single-deck, heavy-duty Ripl-Flo, equipped with ⅞-in. cloth. Overage off this deck goes by gravity feed to the final reduction crusher, while minus ⅞-in. material goes by gravity feed and conveyors No. 7 and 8 to the screen tower and its proper bin.

The final reduction crusher, a Model 3½-51 Hydrocone, having a 1½-in. c.s.s. and 1¼-in. throw, is driven by a 150-hp., 900-r.p.m. motor. Discharge from this crusher goes back by gravity feed to conveyors No. 5 and 6 in closed circuit, to feed again through No. 3 screen. Rejects off this screen again pass through the final crusher.

In the screen tower the feed from conveyors No. 7 and 8, augmented by additions from the gravity feeds from screens No. 2 and 3, is split to feed into two sets of No. 4 screens, both of which are 5- by 12-ft. double-deck heavy-duty Ripl-Flos. Each is driven by a 7½-hp., 1,750 r.p.m. type AZPT motor. Both screens are equipped with 1½-in. top cloth and ⅞-in. cloth on the bottom deck. The plus 1½-in. material off the top decks of both screens goes by chute to the 2½-in. bin, while the plus ⅞-in. material is chuted into the 1¼-in. bin. Fines (minus ⅞-in.) from one set of these screens pass down to a 5- by 14-ft. double-deck heavy-duty Ripl-Flo screen having ⅝-in. top cloth and 5/16-in. on the bottom deck.

The other top screen in this setup is a double-deck Ripl-Flo, of the same size. It discharges its minus ⅞-in. fines by chute down onto the corresponding screen, which is a triple-deck Ripl-Flo, having ⅝-, 5/16-, and 3/16-in. cloth. Material off and through all these decks is chuted into the respective bins holding those sizes.

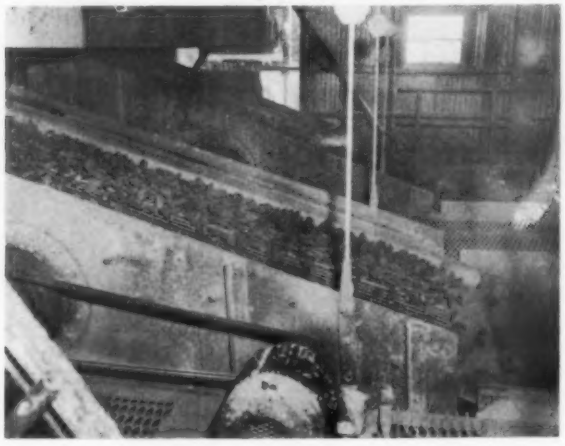
The ten storage and delivery bins

(*Continued on page* 192)

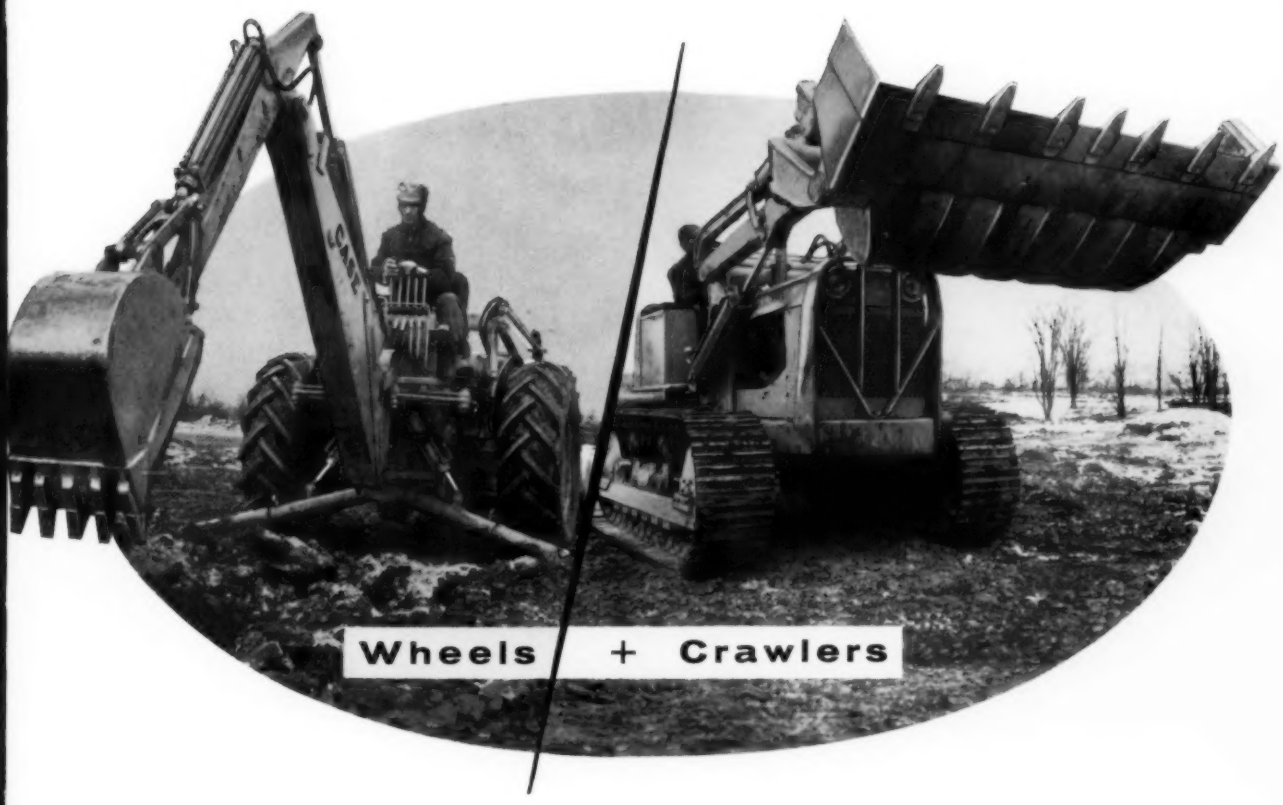
Left: George D. Pollard, superintendent of the stone plant, with main tower and scalping screens in background.

Below, left: One of the three feeders operating under the 6,000-ton surge pile; these feed materials to conveyor No. 3, which discharges into the first of the secondary reduction crushers, via a re-crush elevator.

Below, right: One pair of the twin 5- by 12-ft. double-deck screens, taking material coming into the screen tower.



CASE + TERRATRAC®



NOW UNITED...to serve you better!

Recent consolidation of Case industrial wheel tractors and TerraTrac crawlers gives J. I. Case Company the *most complete line* of powered earth-moving and materials handling equipment in the 40 to 100 horsepower range. You now have a choice of 20 rugged Case-TerraTrac prime-movers — on both wheels and crawlers — plus over 50 combinations of mounted equipment — *100% Case-engineered, Case-built and Case-warranted.*

Back of this diversified tractor line are the tremendous resources of J. I. Case Company, with its 115-year reputation for dependable equipment, and *over 7,000,000 sq. ft. of modern production facilities.* Case even operates its own foundries, forge shops and engine plants, to insure more closely controlled quality at lowest possible prices.

Service-wise, too, Case is exceptionally well equipped, with in-stock parts and experienced personnel — "on call" through a world-wide network of independent dealers and factory-owned branches.

Let your nearest Case *industrial* dealer show you how Case service, combined with the many advanced features of Case industrial wheel-units and Terra-Trac crawlers, can *help you handle a wider range of work at higher net profit in 1957.*

CASE

J. I. CASE COMPANY, Racine, Wisconsin, U.S.A.

Famous for quality for over 100 years

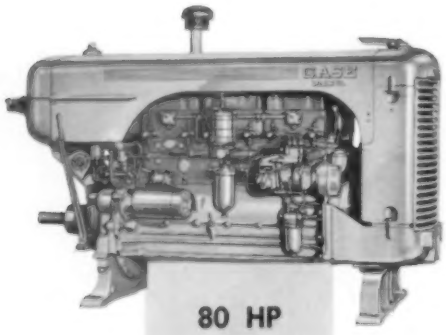
One of the world's five leading producers of powered equipment for construction • roadbuilding • industry • agriculture

NEW

80 HP
Gas & Diesel

100 HP
Diesel

...CASE-



80 HP

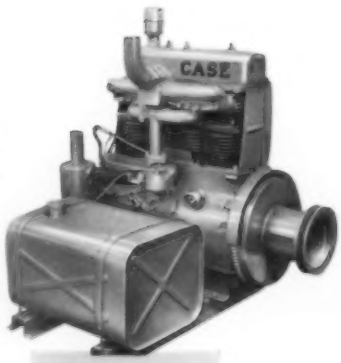
LUCKY
is the
man who
OWNS ONE!

Spearheading the spectacular new Case industrial line are two powerful new *80 and 100 HP* TerraTrac crawlers that promise to change the entire concept of crawler tractor performance on *heavy-duty* earthmoving and materials handling jobs.

Most dramatic advancement in these new big-capacity TerraTrac crawlers is a new *counter-rotating* hydraulic transmission, which provides independent power-control of each track — both as to speed and direction. This *exclusive* patent-applied-for-feature, com-

ENGINES

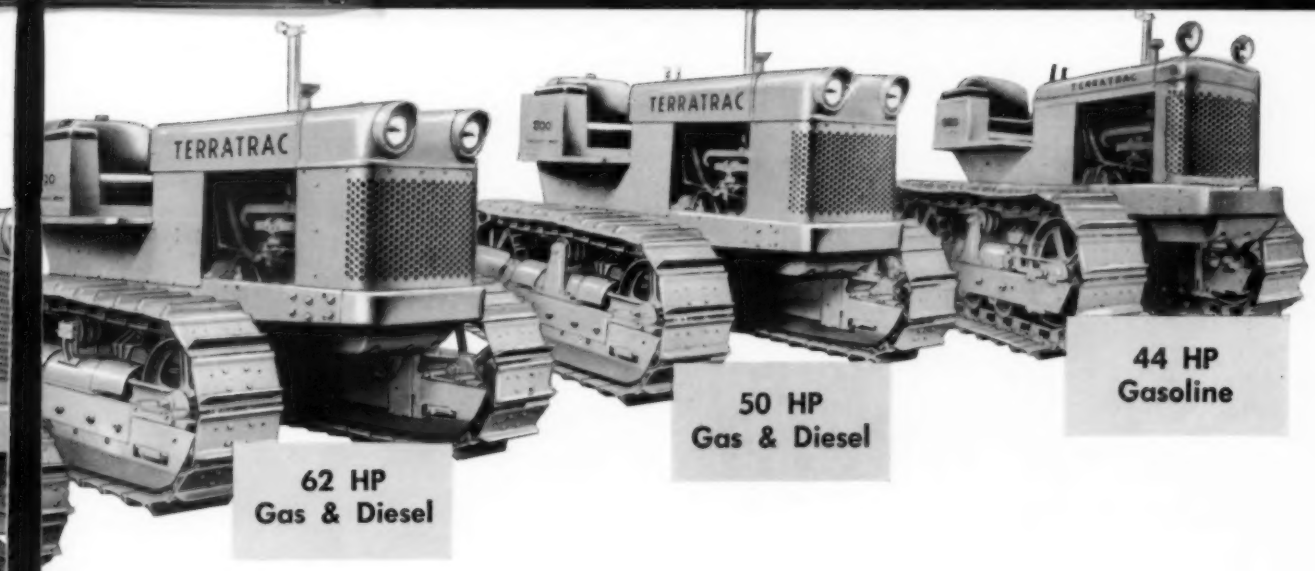
Case also builds a complete line of high-compression, hi-torque engines — from 30 to 80 gross HP, for powering pumps, rock crushers, and other industrial equipment. There's a Case-engine for every fuel — diesel, gasoline, natural gas or LP gas.



30 HP

60 HP
Gas & Diesel

Plus OVER 50 COMBINATIONS OF MOUNTED EQUIPMENT —



TERRATRACS® up to 100 HP

bined with torque converter drive, instant power-shifting, power-steering, power-brakes, automatic track lubrication and torsion-bar suspension, give these rugged TerraTrac machines a combination of power, speed and ease of maneuverability that is *unmatched* in the crawler field.

In heavy-duty rubber-tired tractors, too, Case has taken the lead with three powerful new industrial models, ranging from 42 to 60 HP. *In the low-priced field,* only the Case Model 320 provides shuttle transmission, power-steering, drop-forged front axle, cushioned seat, *plus* industrial bumper and radiator guard. What's more, Case alone offers a *full range of matching equipment* — 100% Case-engineered, Case-built and Case-warranted — to help you handle more jobs, more profitably.

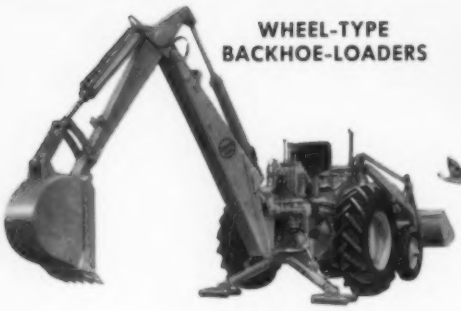
Whether it's the low-priced 42 HP wheel, or the sensational 100 HP crawler, your Case industrial dealer is ready to give the *"best trade in town"— plus 1 to 2-year financing, with easy monthly terms.*

Write today for name of your nearest Case industrial dealer, who can give you the facts and figures you need on these new machines — to take full advantage of the booming construction and roadbuilding market in your territory.

J. I. CASE COMPANY, Racine, Wis., U.S.A.
Famous for quality for over 100 years

100% CASE-ENGINEERED . . . CASE-BUILT . . . CASE-WARRANTED!

NEW



WHEEL-TYPE BACKHOE-LOADERS

UTILITY WHEELER WITH MOWER

CRAWLER-LOADERS
½ to 2-cu. yd.

...CASE-BUILT EQUIPMENT

features sensational engineering advances

HYDRAULIC SCARIFIERS

To increase your profit opportunities with the new 40 to 100 HP Case-TerraTrac crawlers and industrial wheel tractors, Case offers over 50 combinations of matching equipment including: new high-dump loaders from *½ to 2-cu. yd.* capacity . . . powerful angledozers that lift and angle *hydraulically* from the operator's seat . . . husky bulldozer blades that lift, tilt and tip *hydraulically* . . . heavy-duty backhoes with hydraulic foot-controlled 180° swing . . . materials-handling fork lifts . . . hydraulic mowers and powerful hydraulic scarifiers. What's more, *all* of this equipment is 100% Case-engineered, Case-built and Case-warranted, exclusively for use on Case-TerraTrac tractors, so you can always depend on "*undivided responsibility*" *in both performance and service.* This is just another reason why it will pay you to standardize on Case-TerraTrac machines — to increase your earnings this year and in the years to come.

CRAWLER-BACKHOES

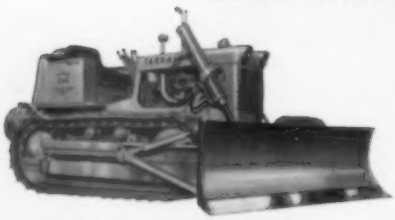
CRAWLER FORK-LIFTS

CRAWLER LOADER-DOZER COMBINATIONS

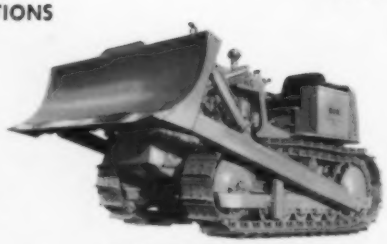
CASE

J. I. CASE COMPANY, Racine, Wisconsin, U.S.A.
Famous for quality for over 100 years

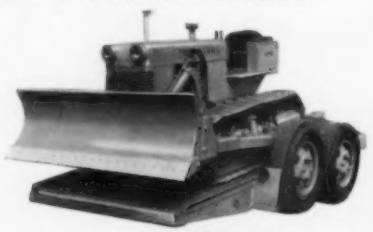
NOTE: Additional equipment, including winches, sideboom cranes and other special tools are currently available for use with TerraTrac crawlers and Case wheel tractors through various independent manufacturers.



CRAWLER-ANGLEDOZERS



CRAWLER-BULLDOZERS



4 AND 8-TON TILT-TRAILERS

CT-CL-

7 Manufacturing plants . . . world-wide sales and service

Second Annual N.C.L.I. Convention

shows group is gathering momentum

Another ON THE SPOT Report

THE second annual convention of the National Crushed Limestone Institute, held at the Statler Hotel in Washington, D. C., on January 24, provided attending members with an impressive program of up-to-the-minute discussions on a subject in which the group is vitally interested—the new highway program.

Although the session was limited to one day, the full schedule incorporated talks by Senator Albert Gore (Tenn.), chairman of the Senate Public Works Subcommittee on Roads, and co-author of the expanded highway program bill, as well as a group of prominent men who are long on experience in road construction.

This group included J. N. Robertson, president, American Road Builders Association; Capt. C. D. Curtis, commissioner, Bureau of Public Roads; A. L. Smith, chief, primary highway branch, engineering division of the Bureau; and A. C. Leonard, chief, secondary road branch, engineering division.

Officers and Directors Along with new officers, an executive committeeman and three regional vice-presidents were elected at the meeting. The new officers include: president, J. B. Mount (Maymead Lime Co., Shouns, Tenn.); first vice-president, C. A. Broecker, Indianapolis, Ind.; executive vice-president, Robert M. Koch, Washington, D. C.; treasurer, Taisto Laine (Limestone Plant, Hanna Coal Co., Carrollton, Ohio); and secretary, Thomas B. Stafford (Vermont Marble Co., Proctor, Vt.). The latter four were re-elected to their respective posts.

Newly elected to the executive committee was Roger E. Meshberger (Meshberger Stone Co., Inc., Columbus, Ind.). Other members of this committee, in addition to Messrs. Blount and Broecker are: Buford V. Everett (Everett Quarries, Inc., Plattsburg, Mo.); L. R. Falk (L. R. Falk Construction Co., St. Ansgar, Iowa); W. O. Faylor (Faylor Lime & Stone Co., Winfield, Pa.); Paul Frank (Paul Frank, Inc., North Vernon, Ind.); Joseph J. Griesemer (Griesemer Quarry, Springfield, Mo.); Robert M. Patton (New York Coal Company, Columbus, Ohio); and E. B. Snead (Texas Crushed Stone Co., Inc., Austin, Tex.).

Thomas E. Lalley (Bradford Hills Quarry, Inc., East Petersburg, Pa.)

Guests at the N.C.L.I. luncheon, at which Senator Gore was the speaker, included several top government highway officials.

and Arthur Overgaard (Arthur Overgaard Co., Elroy, Wis.) were re-elected as regional vice-presidents and are joined by three men newly elected to the post: D. L. McCullough (Alabama Aggregate Co., Inc., Birmingham, Ala.); George B. Nienaber (Nienaber Contracting Co., St. Paul, Minn.); and Mr. Snead.

Mrs. Gale Patterson (Patterson Quarries, St. Charles, Minn.) was named to the board of directors. Provision was made during the convention to establish equal representation on the board for each region and to set up one-, two-, and three-year terms, so that in the future only one-third of the directors will be elected each year.

Board and Business Meetings Preceding the general session, a board meeting was held at which committee reports were presented on such matters as nominations, percentage depletion, and meetings held with Bureau of Public Roads officials for the purpose of studying specifications covering aggregates used in federal-aid highway construction.

A general business meeting was held following the luncheon, at which the nominations to the board of directors were unanimously elected. The board now has 60 members.

Robert M. Koch presented a report on the activities of the N.C.L.I. staff during the last year. Mr. Koch stated that a greater part of the effort is being expended in contacting officials of the Bureau of Public Roads, as well as Congressional leaders concerned in getting the highway program under way.

The executive vice-president noted that not only is it difficult in some cases to make contact with various officials but also to get certain information across to them. The points that need to be considered, he added, are not just the current problems involved with getting the road program organized but also whether in the long run the program is actually big enough. These matters, it was said, will require constant attention and effort on the part of N.C.L.I.'s Washington representatives.

A discussion was also held on the subject of a motion picture in color which the A.R.B.A. proposes to make for the purpose of acquainting the general public with technical and financial details of modern highway construction, as well as to interest college students in highway engineering as a profession.

It was brought out that N.C.L.I. had been approached as a possible participating group in subsidizing the project. Discussion from the floor indicated that similar efforts, on a smaller scale, in various areas had proven the value of such an educational film; and the proposal that this group furnish financial assistance to the A.R.B.A. film project was unanimously approved.

Highway Program During the morning general session, over which president Jos. T. Griesemer presided, a group of four men, representing the A.R.B.A. and the Bureau of Public Roads, acquainted the members with the background, current problems, and future activity of the new expanded highway program.

J. N. Robertson, president, A.R.B.A., prefaced his discussion by noting that no single segment of the highway industry can expedite the gigantic program, but that the combined segments, such as those represented by the road building association—of which N.C.L.I. is a member—can do so.

Mr. Robertson listed the eight separate divisions of the association, each of which functions under its own bylaws, as: county and local roads; educational; manufacturers; engineering and financing; Pan American; municipal and airport; contractors; and materials and services.

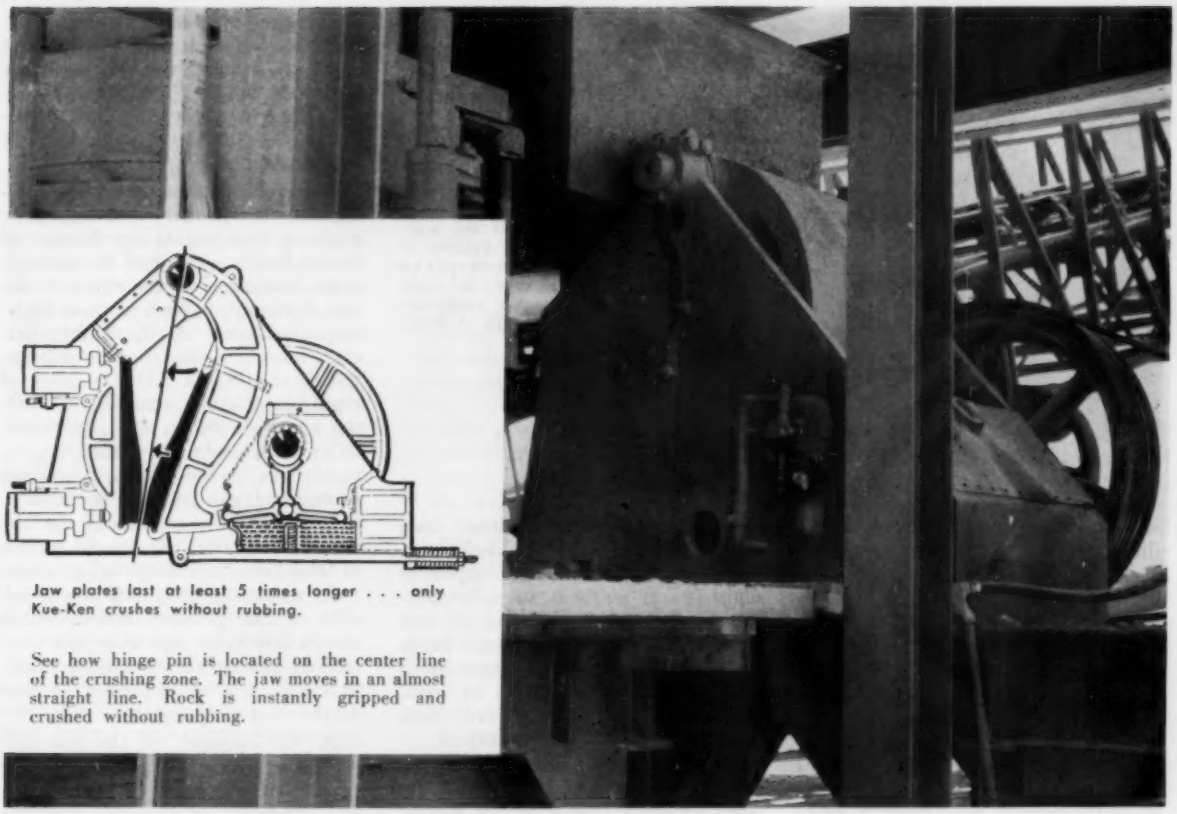
With respect to the background of the present program, it was brought out that task force studies—requested by the President's highway advisory committee—were started in 1954 on the subject of industry capacity. These were also presented to Senate and House committees, and, after the failure of the first bill in the House, were brought up to date and presented to the committees again prior to the passage of the bill last year.

C. A. Broecker, Indianapolis, Ind.; J. B. Mount (Maymead Lime Co.); and Thomas B. Stafford (Vermont Marble Co.), were elected to the offices of first vice-president, president, and secretary, respectively of N.C.L.I.

With Jos. J. Griesemer (center), retiring N.C.L.I. president, are J. N. Robertson (left), president of A.R.B.A., and Capt. C. D. Curtis (right), commissioner, Bureau of Public Roads, who spoke at the general session.

In January of this year, the A.R.B.A. was requested by the Senate to present data on the readiness of the industry to move into action on the highway program. Confidence was expressed in the ability of the industry to meet accelerated construction with maximum efficiency and economy.

Mr. Robertson reported that A.R.B.A. proposes to have a color



Jaw plates last at least 5 times longer . . . only Kue-Ken crushes without rubbing.

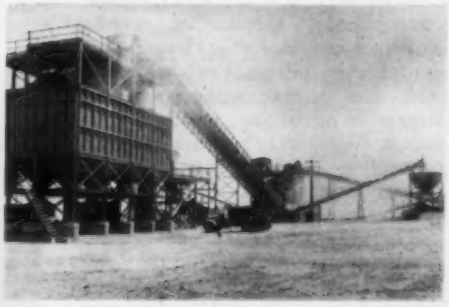
See how hinge pin is located on the center line of the crushing zone. The jaw moves in an almost straight line. Rock is instantly gripped and crushed without rubbing.

30" x 12" Kue-Ken jaw crusher in secondary reduction to 2½"

Low maintenance, long jaw plate life feature KUE-KEN® CRUSHERS in 300 t.p.h. concrete materials operation.

The continuous operation of the new Hartman Concrete Materials Co. plant near Bakersfield, Calif. provides a rugged test for rock crushers. Kue-Ken jaw crushers for primary and secondary crushing have proved the most economical and dependable ever used. The 27" x 42" Kue-Ken in primary crushing reduces pit run down to 4½" operating on only 75 hp. After 8 months it is still on its original set of jaw plates with many more months of service expected. A 30" x 12" Kue-Ken jaw crusher that further reduces rock to 2½" has been operating for years and has required virtually no maintenance. This remarkable service is due to the patented design of Kue-Ken Crushers! Rubbing, the main cause of jaw plate wear in ordinary crushers, is practically eliminated with Kue-Ken design. Compare the sealed and lubricated toggle mechanism in Kue-Ken crushers to any other. With Kue-Ken, maintenance is practically eliminated at this point. On overload or tramp iron, the flywheel is automatically released avoiding breakage. It can be quickly reset.

Write for Catalog



Efficient 300 t.p.h. Hartman Concrete Materials Co. plant near Bakersfield, Calif. uses Kue-Ken crushers for primary and secondary crushing.

STRAUB MFG. CO., INC. 8386 Baldwin St.. Oakland, Calif.

KUE-KEN® CRUSHERS

"CRUSHING WITHOUT RUBBING"

Jaw Crushers Gyratory Crushers Overhead Eccentric Crushers Revolving Screens
Classifiers Feeders Rib Cone Ball Mills Concentrating Tables Vibrating Screens

DEALERS:

SEATTLE, WASH.	Washington Machinery Co.
SALT LAKE CITY, UTAH	Lund Machinery Co.
SAN ANTONIO, TEX.	Closner Equipment Co.
PORTLAND, ORE.	Contractors Equipment Co.
LOS ANGELES, CALIF.	Garlinghouse, Fremon Co.
PHOENIX, ARIZ.	Stapley's
DENVER, COLO.	Union Supply Co.
CASPER, WYOMING	Moss Equipment & Supply Co.
VANCOUVER, B. C.	Universal Equipment Co.

Pennsylvania Crusher Division, Exclusive Licensed Eastern Manufacturer and Distributor, 323 S. Matlack St., West Chester, Penn.
Armstrong Whitworth (Metal Industries) Ltd., Authorized Licensed Manufacturer and Distributor. Close Works, Gateshead-upon-Tyne 8, England

A. L. Smith, R. M. Patton (New York Coal Co.), and A. C. Leonard. Mr. Smith and Mr. Leonard are chiefs of the engineering divisions of the primary and secondary road branches, respectively, Bureau of Public Roads.

motion picture with sound made to illustrate the latest technology in highway work and acquaint the general public with how the job is done, costs are spread, as well as safety and economic aspects. The movie will show the step-by-step construction of a modern highway.

With respect to the aggregate production industry, there is apparently no question as to its ability to meet accelerated road construction — a program which will require more than 76,000,000 tons of aggregate for each $1,000,000,000 of road building. On that basis, 800,000,000 tons of aggregate will be needed when the annual construction expenditure has reached the ultimate rate of $8,500,000,000 per year.

In his address, Capt. C. D. Curtis, commissioner, Bureau of Public Roads, noted that the 13-year program for the national system of interstate and defense highways is the largest in all history, and will provide a 40,000-mile network of roads connecting all states and nearly all cities of more than 50,000 population.

The $25,000,000,000 of federal funds, plus state contributions, will be used for a coast-to-coast system designed to accommodate the more than 90,000,000 vehicles expected by 1975. In addition to the long-range interstate program, the regular system was allocated substantial funds which will be broken down as follows: primary—45 percent, secondary—30 percent, and extensions in urban areas—25 percent.

Both interstate and other classes of federal-aid road construction are to be carried out under certain principles established in early legislation. These include: co-operation with state highway departments; initiative in selection of systems and route locations to rest with the states; state highway departments to make surveys, let contracts, and supervise construction, subject to approval by the Bureau of Public Roads; and apportionment of federal-aid funds among the states under formulas in the law involving factors of area, population, and mileage of rural delivery and star mail routes; etc.

Captain Curtis suggested that producers take stock of their situations with respect to several points. Among these are the possible need for modernization, the question of efficiency with respect to the use of cost-saving equipment and methods, and the question of whether or not capacities would have to be expanded.

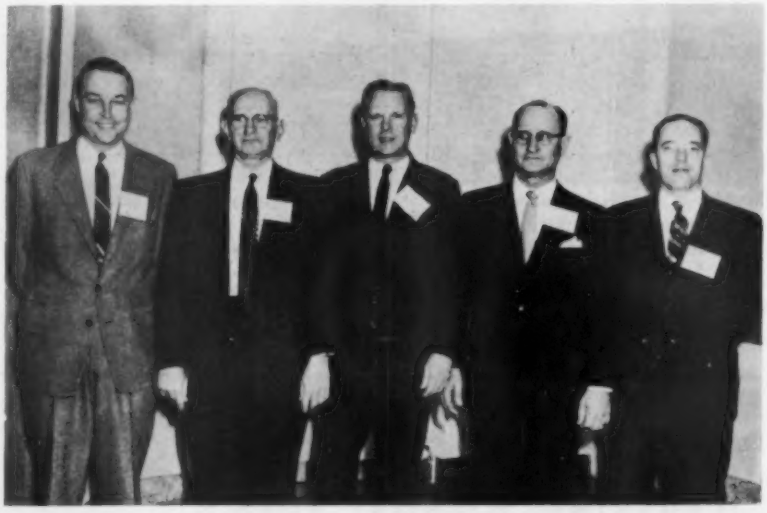
The speaker also emphasized that the writing of specifications for aggregates, while a problem for the highway engineer, is an area in which the producers can be of great assistance since they best know their material, as well as the economics of its production.

The chiefs of the engineering divisions for the primary and secondary highway branches of the Bureau of Public Roads concluded the meeting with discussions on the effect of the new highway program in those highway categories. A. L. Smith, primary branch, noting that the primary system consists of 235,000 miles of roads, pointed out that this includes the interstate system and also 18,500 miles in urban areas. Many important roads in the system, while not interstate highways, will be built to nearly the same standards as the interstate groups, due to the nature of their being near large urban areas.

As a result of the funds now available to the primary system, roads that a few years ago were not considered as warranting a high standard, can now be improved as part of the over-all programs.

A. C. Leonard, of the Bureau's secondary branch, brought out the point that the secondary roads were not forgotten in the new highway bill. There is a 50 to 60 percent increase in the funds now available over those previously authorized, and the secondary system program receives 30 percent of all regular federal-aid funds.

Significantly, the average county



Senator Albert Gore (center), co-author of the new expanded highway program bill, was the featured speaker at the N.C.L.I. luncheon. Institute officers in the group include: Robert M. Patton (New York Coal Co.); J. B. Mount (Maymead Lime Co.), new N.C.L.I. president; Jos. J. Griesemer (Griesemer Quarry), retiring president; and Robert M. Koch, executive vice-president.

has about 160 miles of roads on the federal-aid secondary system, and since secondary road projects are being carried out in about 2,000 of the nation's 3,000 counties each year, the number of producers involved is substantial. Further, since the interstate system passes through about 37 percent of the counties in the nation, the paralleling and intersecting roads leading to interchanges (designed to meet controlled access requirements) will represent a considerable factor in the demand for aggregates.

Senator Gore's Address Senator Albert Gore (Tenn.) was the featured speaker at the N.C.L.I. luncheon, which was presided over by director Robert M. Patton (New York Coal Co.). As co-author of the expanded highway program bill enacted by Congress last year, Senator Gore presented several interesting and informative details on the development of the program and also its problems.

Noting that it would be difficult to overestimate the value of the highway program now getting underway, the senator added that it was nevertheless difficult to get a bill through that was acceptable to Congress, to the administration, and to the country.

An interesting point in the senator's connection with this bill is the fact that, as he commented, he had requested assignment to many committees other than Public Works. The Senator now considers it fortunate that fate intervened, and stated that the new highway bill may very well prove to be the landmark of his service.

As a result of growing concern late last year over the apparent delay in the program, a hearing was held. Evidence presented lent support to that concern, the Senator said. It developed that there were two primary factors involved—a lack of uniform progress, and the threat of serious steel shortages.

During hearings held in January, it was indicated that about 20 states had committed less than 20 percent of their fiscal 1957 allotments, some were in the zero column, and others had 100 percent commitment. A list was then made public of the degree to which the states were committed. This move has had the beneficial result of increasing activity on the part of many states. It was emphasized that the maintenance of uniform progress will be closely watched from this point on.

The second item of serious concern—the threatened steel shortage—was indicated to be under careful study at this time. Senator Gore noted that nearly every witness who had appeared before his committee as a representative of an industry group was optimistic about the program, with only one reservation—providing that steel be available.

Testimony recently presented by men of the steel industry indicates sharply increased prices, and a gap between supply and demand, by 1960, of some 15,000,000 tons. The possibility of gray (and even black) markets in steel was indicated.

No legislative proposals are being considered in this regard, the senator said, but the problems may be attacked most effectively through presenting the public with all the facts as they develop. If the problem becomes more acute, the financing will be inadequate, due to upset cost estimates, it was pointed out.

Senator Gore expressed confidence that the co-operative effort on the part of industry, federal, and state agencies, in establishing uniform progress will bring the program to completion on schedule.

Mid-Year Meeting The annual mid-year board meeting of the N.C.L.I. directors has been scheduled for Wednesday, June 19, at the Edgewater Beach Hotel in Chicago.

Washington News

(*From page* 12)

would not be unprepared.

Certainly, the first thing it would do would be to ease money. This would require no legislation and therefore could be done with great dispatch. The Federal Reserve Board is in complete control of this matter and could act almost overnight if necessary. Right now, that board is continuing its policy of restraint on credit extension. Apparently, it still believes that the evidences of economic decline are inconclusive.

Second, the enormous government budget, which has given so many people so much concern, is nevertheless one of the most important factors in maintaining an even keel. Its operation as a stabilizing force is almost automatic. With any substantial decline in business, tax receipts would fall even more rapidly. This would automatically slip the government's budget into the red. To meet its required expenditures, it would be necessary for the government to borrow money from the banking system, which in itself is an inflationary factor releasing large amounts of funds into the economic system and acting as an impetus to economic activity. Furthermore, although it would take a little longer because legislation would be required, the personal income tax could be cut. This, too, would encourage further consumer expenditures.

Finally, the government could, and probably would, step up its own spending program. Although much can be done along these lines without waiting for congressional approval, this, nevertheless, is not a program which can take effect immediately. This is because the expansion of public works frequently requires planning and an organization which is not always available.

A recent development in public works programming has made it possible to speed up the process, at least in some respects. This development is the "lease-purchase" program. Under this program, many government buildings, such as post offices and others, are now constructed by private contractors with private financing. These structures are then leased to the government under an arrangement whereby the government ulitmately purchases the building through a form of paying rent over a long number of years. It is likely that such quasi-private arrangement could get under way more rapidly than the usual kind of direct government public works with its complex organization, bidding arrangements, and contract awarding.

Incidentally, the government recently cut off this "lease-purchase" program because of its belief that the plan was further contributing to the inflationary danger. This in itself is an interesting observation on the government's appraisal of the economic situation. The government is still more worried about its going up than about its going down. This appraisal could, of course, be wrong, but it is heartening, nevertheless. It is equally heartening to know that even if it is wrong, the government and the people are not completely defenseless.

ROBERT MITCHELL, president of the Consolidated Rock Products Company, Los Angeles, Calif., presided over the 14th Annual Employee Relations Conference of Merchants and Manufacturers' Association at Palm Springs. Mr. Mitchell opened the conference on October 14th at the El Mirador Hotel and presided over the remaining sessions.

New trends in the use of refractories by **LACLEDE-CHRISTY**

LACLEDE-CHRISTY introduces new packaging for Refractory Specialties

For improved identification. Product and application data on Laclede-Christy's new castables, plastics, ramming mixes and bonding mortar, cartons and drums and bags are clearly visible and easy-to-read.

Improved product protection. Laclede-Christy cartons, drums and bags contain consistently high quality products securely protected during shipment and handling. Drums are sealed against weather and water.

New quality-first controls also are in effect at Laclede-Christy. They add to improved packaging as reasons why you profit by using Laclede-Christy refractory products. Your Laclede-Christy man will be glad to give you a complete report. See him soon. Laclede-Christy Division, H. K. Porter Company, Inc., St. Louis 10, Missouri.

HKP LACLEDE-CHRISTY DIVISION
H. K. PORTER COMPANY, INC.

Canadian Cement Review

(*From page* 110)

Lake Ontario It is reported by this company that work on the new cement plant and aggregate plant of the Lake Ontario Portland Cement Co., at Picton, Ont., is progressing rapidly. This is to be a dry process operation with a capacity of 5,000 U. S. bbl. daily. Some of the equipment has already been delivered, and the cement plant is expected to be in operation about Septmber 15, 1957. The aggregate plant is to have a capacity of 600,000 tons annually and is planned for completion in time for the 1957 construction season.

Major equipment for the cement plant includes a 48-in. Kennedy-Van Saun gyratory primary crusher, two impact crushers, a clay dryer, two 11- by 375-ft. Kennedy rotary kilns with air-swept coal mills, Fuller grate coolers, and four 11- by 20-ft. Kennedy ball mills in closed circuit with 16-ft. Raymond separators. Each mill can be used for either raw material or clinker grinding and is equipped for either drying or cooling.

It was reported recently from another source that a new firm, the Rochester Portland Cement Co., Rochester, N. Y., plans to start work soon on facilities costing more than $1,000,000 for importing and distributing cement through the port of Rochester. A 300-ft. dock, four 90-ft. high, 25,000-bbl. silos and a bagging department are to be built. The cement is to come from the plant of the parent company, the Lake Ontario Portland Cement Co. Ltd., at Picton, Ont., which is under construction on the opposite short of Lake Erie. Plans are to import 160,000 tons of cement annually.

North Star North Star Cement Ltd., Corner Brook, Newfoundland, reports no expansion in 1956 and none planned for 1957. Its plant is adapted to the cement market on the island of Newfoundland; and, while this has increased during the last years, it has not yet reached the capacity of the plant. Exports to the Canadian mainland are expected to decline in 1957, due to the expansion in capacity there.

St. Lawrence The St. Lawrence Cement Co., which in 1954 built a new 1,400,000 bbl. plant at Villeneuve (near Quebec City), Que., in 1956 improved this operation through the addition of a third finish grinding mill and other equipment.

Late in 1956 this firm completed

the construction of a new $15,000,000 plant at Clarkson, Ont., 15 miles west of Toronto. This 1,500,000-bbl. plant includes a 12½- by 402-ft. rotary kiln. While construction was still in progress, it was announced that capacity would be doubled; and a second kiln of the same capacity is expected to be in operation this month. Four 8- by 37-ft. raw mills and five 10- by 28-ft. clinker mills are used. The total cost of the plant will be $28,000,000, and space has been provided for a third kiln and other equipment.

A packing station under construction in Montreal, to be supplied by either the Quebec or the Toronto plant, will be ready early in 1957.

The St. Lawrence Cement Co. is controlled by Holderbank Financiere S.A. of Switzerland, which operates 21 other cement plants throughout the world.

St. Mary's The St. Mary's Cement Co., Ltd., St. Mary's, Ont., is reported to have completed a $2,500,000 expansion program late in 1956. The addition of a new kiln and other equipment increased capacity 750,000 bbl. to 3,000,000 bbl. annually.

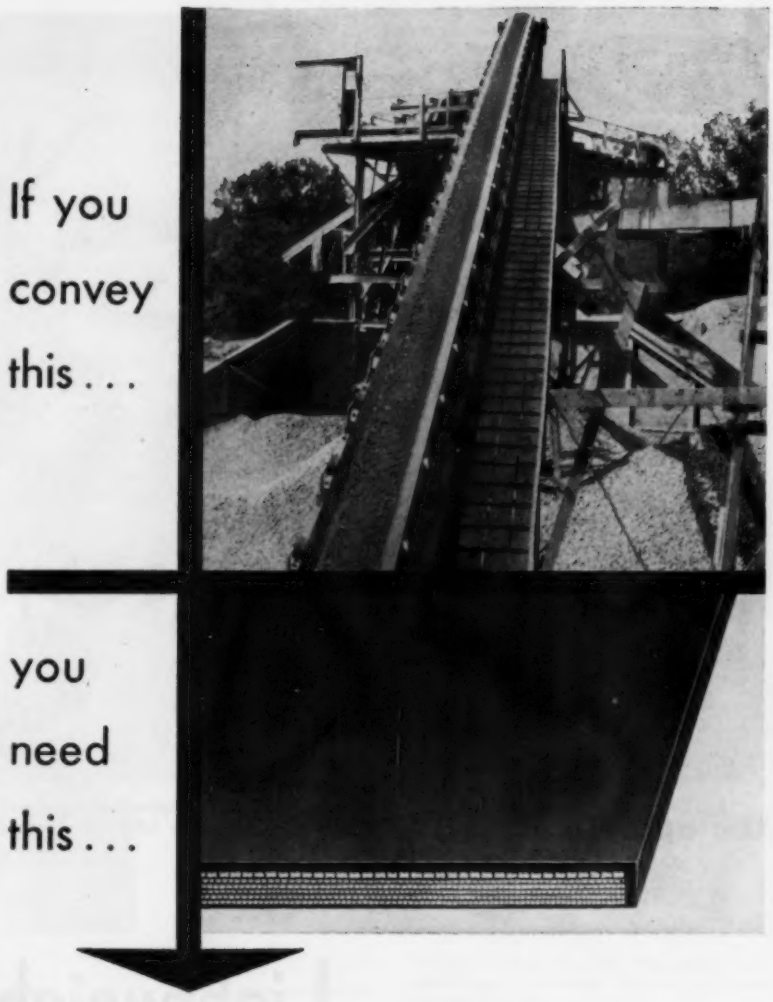
Saskatchewan The Saskatchewan Cement Corp. Ltd., Regina, Sask., is reported to have begun production late in 1956 at its new $8,000,000 cement plant. Capacity is 850,000 bbl. annually. Standard portland, high-early strength, oil-well, and modified sulphate-resisting cements are being made.

Dravo to Build Equipment For Alumina Operations

The Olin Revere Metals Corporation, recently formed by Olin Mathieson Chemical Corporation and Revere Copper and Brass, Inc., has approved the awarding of contracts to Dravo Corporation, Pittsburgh, for the construction of an integrated system which will speed the conversion of bauxite into aluminum.

Components of the system are a 935-ft. ship dock and an electric bulk materials unloader, to be installed at Olin Revere's new bauxite refining plant at Burnside, La.; and a 200-ft., 4,200-hp. towboat and two specially designed 15-barge fleets (Dravo is furnishing 24 of these barges) which will be used to transport alumina from Burnside to Olin's aluminum plant at Omal, Ohio.

The new 200-ft. towboat will be one of the largest on the inland waterways. It will be powered by twin Nordberg diesels capable of delivering 4,200 total hp.



QUAKER CONVEYOR BELTING FOR TOUGH SHOCK RESISTANCE!

The Quaker belt you see above is made especially to take the impact and abrasive wear of sharp, jagged loads.

Carcass is formed of multiple plies of strong, high-quality cotton duck, with skim coat between plies. Average cover tensile strength is 2500 to 3000 lbs.

Do you need even greater troughability, flexibility or tension rating? Quaker can supply belts of new high tensile strength rayon or cotton-nylon fabrics. Any desired cover thickness.

Your Quaker Rubber-Quaker Pioneer Rubber distributor also carries a complete line of hose, packing and moulded rubber products for every use. Call him today.

For free brochure, please write to:
H. K. Porter Company, Inc.,
Quaker Rubber Division,
Philadelphia 24, Pennsylvania, or
Quaker Pioneer Rubber Division,
Pittsburg, California.

HKP
QUAKER RUBBER DIVISION
QUAKER PIONEER RUBBER DIVISION
H. K. PORTER COMPANY, INC.

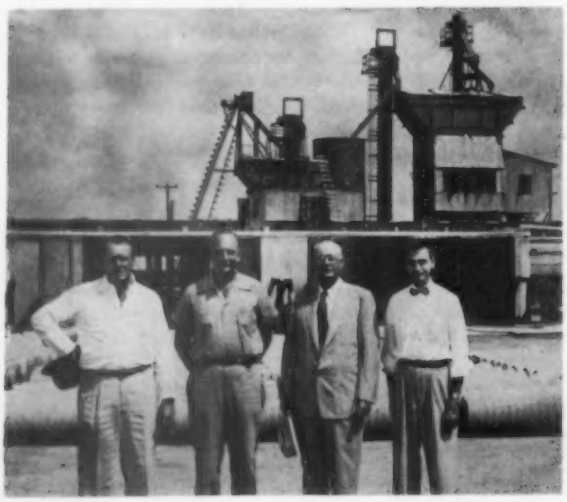
The Barrett Industries lightweight aggregate producing facility shortly after installation. The raw clay storage (upper left) is now housed in a concrete-floored shed.

the operation

Lightweight Aggregate a Basic Factor

in varied operations of Barrett Industries

the key men



Three of the company officials (left to right): Thurman Barrett Jr., William L. Barrett Jr., and Thurman Barrett Sr. At the right is John Funnell of the Southwest Research Institute.

Another ON THE SPOT Report

By BUREN C. HEROD

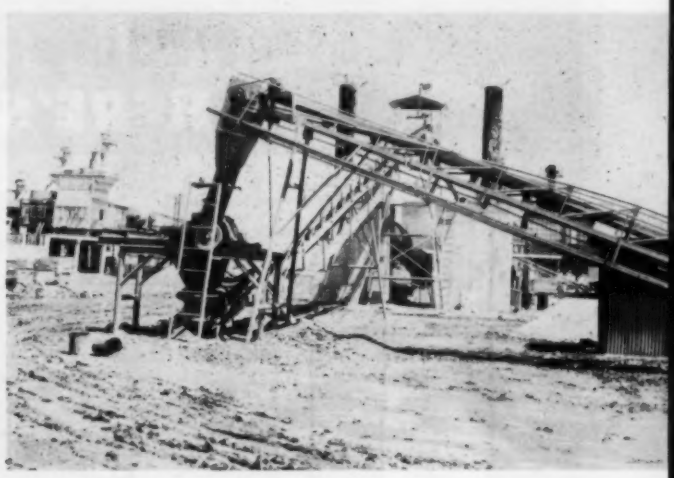
PROBABLY one of the most versatile and diversified producers and manufacturers of construction materials in the Southwest is located in San Antonio, Tex., where Barrett Industries and its numerous activities are headquartered.

The second part of this vigorous organization's name is particularly apropos in view of its varied operations, which include the production of a light-weight aggregate—a material on which considerable research and development effort was expended—lightweight concrete masonry units, concrete sewer pipe and drain tile, and ready-mixed concrete.

In addition to the foregoing, affiliated organizations are involved in producing sand and gravel, as well as in developing residential areas where the construction of a number of concrete masonry homes, utilizing Barrett products, is in steady progress.

A key factor in the growth of these activities and in the increasing widespread demand for the company's products is one of the basic materials — the lightweight aggregate which the firm produces and markets under the name of Barlite. When, several years ago, the company officials foresaw the potential market and consumption of lightweight aggregate for concrete masonry and ready-mixed concrete—particularly in view of booming real estate development with which the firm's founder had long been associated—a planned program of research and

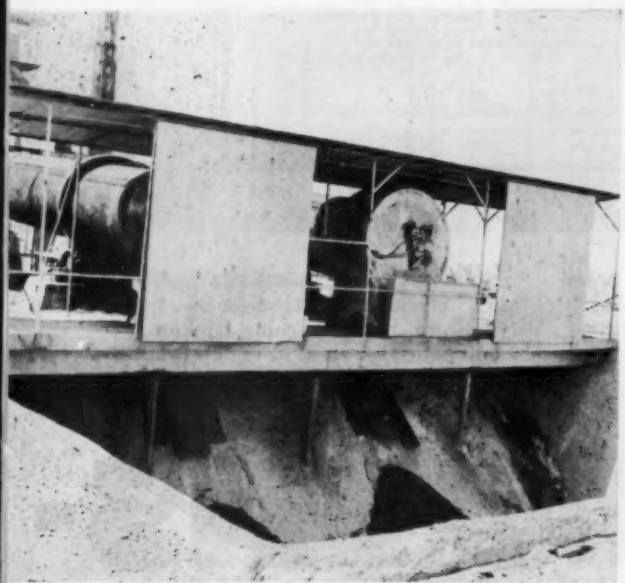
Initial reduction of pit-run clay is accomplished in the shredder (left) before being conveyed to the shed (background).

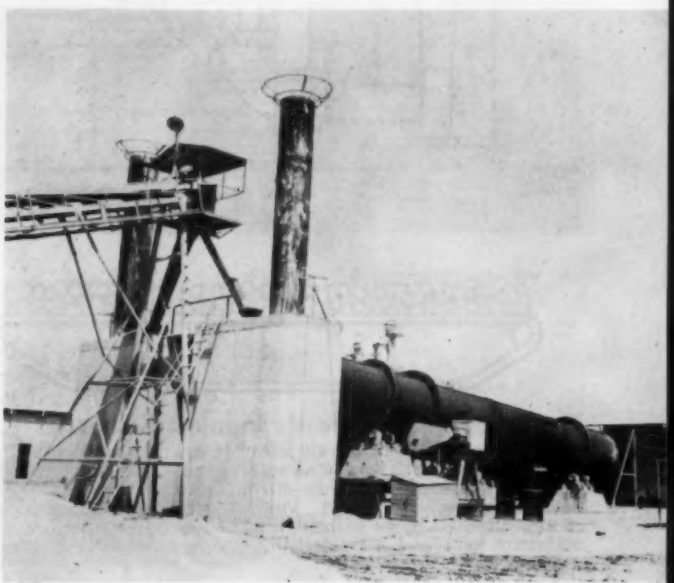


Prior to feeding the kilns, the clay is conveyed from the storage shed and processed through a secondary shredder (left).

Below, left: A view of the clinker cooling pit and discharge ends of the kilns.

Below, right: The two kilns are supplied through the pants-leg chute at the rate of 26 lb. of clay every 5 seconds.

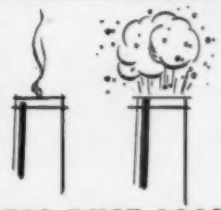




THE ACL SYSTEM

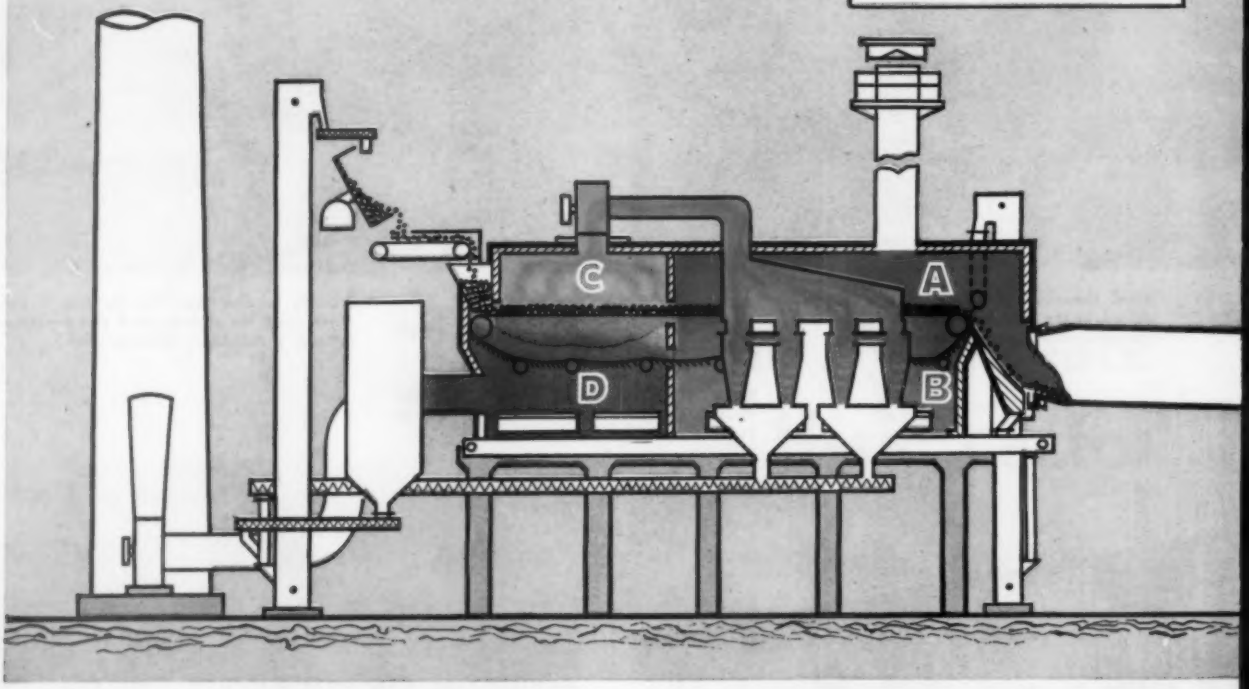
Cuts Cost

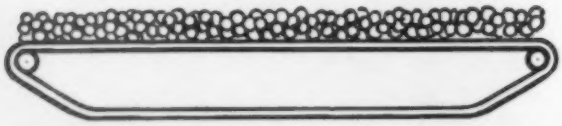
...puts you in a better competitive position—HERE'S WHY



LESS DUST LOSS

Double pass of gases through traveling bed of pellets reduces dust loss below 1% of feed weight without an additional dust-collecting system. Valuable processed material is saved. Dust load of exhaust gas is lower than in any other system.



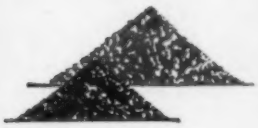


Traveling Grate Affords Many Advantages Because feed volume on traveling grate is constant, kiln operation is uniform and more efficient. There is no segregation of mix. Pelletizing locks in and maintains proportions of components. "Flushing" is eliminated, "ringing" minimized. Voids between pellets permit escape of moisture and gases without fluidization of bed. Because clinker maintains pelletized characteristics, it moves through the rotary kiln uniformly and burns easily.

EFFECTIVE DUST FILTRATION . . . efficient heat transfer . . . more uniform, better burning clinker . . . substantial savings in fuel, power requirements, space and manpower . . . maintenance economy—all these im-

ALLIS-

of Producing Cement

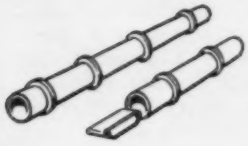


LESS FUEL

Fuel consumption for ACL systems now in operation averages 600,000 Btu per barrel of clinker. Conventional long, dry-process kilns range from 750,000 to 1,000,000 Btu. Powdered coal, fuel oil, natural or coke oven gas may be used.

LESS POWER

The ACL system for burning cement clinker requires about 2.3 kwhr per barrel of clinker for operation of kiln department. This is about one-third less power than required by rotary kilns using other preheating systems.



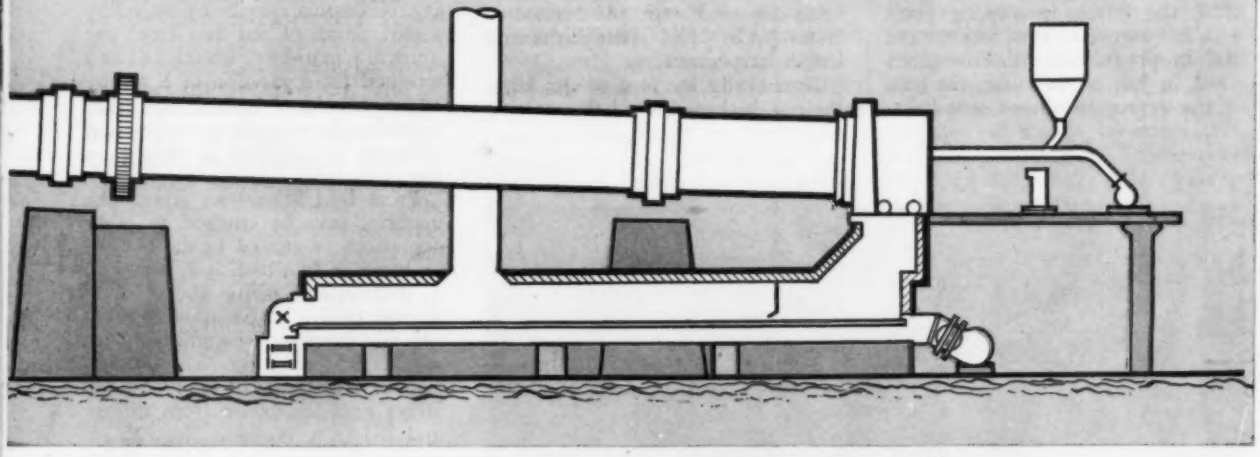
LESS SPACE

Entire ACL system—grate, kiln and cooler — is about 40% shorter than conventional long kiln installations. The totally enclosed traveling grate is about as high as the average kiln feed end housing.

How the Double-Pass System Works

Partial calcining and dust reclamation take place as hottest gases pass through the pellet bed on traveling grate. Gas temperatures are reduced from about 1800 to 500 degrees in this first pass (*A* to *B*). Next, gases pass through cyclones where larger dust particles are removed, and carried back to pelletizer. Final dust filtering takes place as gases pass through moist pellets on feed end of grate. In the second pass (*C* to *D*) gas temperatures are further reduced.

ACL is an Allis-Chalmers trademark.



portant advantages, and many more, are yours with the ACL system.

New Bulletin Available A new bulletin, describing the ACL system, Allis-Chalmers kilns and kiln auxiliaries, is ready for distribution. To get your copy, see your nearby Allis-Chalmers representative or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin. Ask for Bulletin 07B8431.

58 Installations by Lellep Licensees since 1950

CHALMERS

A-5108

development of such aggregates was initiated.

Drilling exploration for suitable clays was pursued throughout the entire Bexar County area. Under the sponsorship of Barrett Industries, evaluation and testing of numerous samples was carried out by the Southwest Research Institute of San Antonio. As a result of physical and chemical studies made by the Institute staff and W. L. Barrett Jr., general superintendent who also heads the firm's own laboratory for testing and research, acceptable material was found on property already controlled by the company as well as in other areas. It has been estimated that at least 20,000,000 cu. yd. of suitable clays are available in the area adjoining the plant site.

From the various analyses taken of the material, it was found that the chemical constituents include about 65 percent of silicon compounds, 20 percent aluminum compounds, and 5 percent of iron compounds. Along with the laboratory testing of the clays, a pilot plant was established under the sponsorship of the Barrett firm to investigate the physical characteristics of the ultimate product.

The material having proved itself highly amenable to expansion processing, and the resultant clinker exceeding required strength, a full-scale operation was designed and equipment was selected. By April, 1954, the Barlite processing plant with its two rotary kilns was erected and in production. Shortly afterward, in July of that year, the bulk of the aggregate output was being consumed in the manufacture of lightweight Barlite concrete masonry units, for the production of which a block plant had also been constructed.

Raw clay for feed to the expanding plant is mined on company property less than a mile from the processing installation. The nominal overburden—less than 2 ft.—overlying the clay is removed by tractor-drawn scrapers. A ½-cu. yd. Quickway truck shovel is used to dig the clay and load it into the haulage trucks.

At the plant site the clay is dumped into a feed hopper from which it is transferred by a company-fabricated plate feeder to an 18-in. belt conveyor, and then transported to a clay disintegrator for initial sizing. At this point the clay is reduced to a top size of about ½-in. through a J. C. Steele and Sons shredder. Raw feed is processed through the latter at the rate of about 400 t.p.d. Following the initial shredding, the clay is transported on a belt conveyor to a concrete-floored storage shed, where it is discharged on a surge pile.

From the latter pile, the material is rehandled by a Trojan Loadster and dumped into a hopper above a belt feeder. The later carries the clay to a secondary shredder—also a Steele unit — where it receives its final reduction. In this process it is reduced to the point where 50 percent will pass a ⅜-in. screen. Maximum dimensions are maintained at about ½ by 1 in. of thickness and length, respectively.

Now ready for feed to the kilns, the clay is chuted to a belt conveyor and transported to a pants-leg chute through which each of the two kilns is supplied equally at the rate of about 26 lb. of clay every 5 seconds.

The 6- by 60-ft. kilns are operated at 1½ r.p.m. with drive furnished by 17½ hp. motors. With natural gas as fuel, the maximum firing zone temperature of about 2,150 deg. F. is maintained. Each kiln has a capacity of 110 to 120 cu. yd. of clinker every 24 hours.

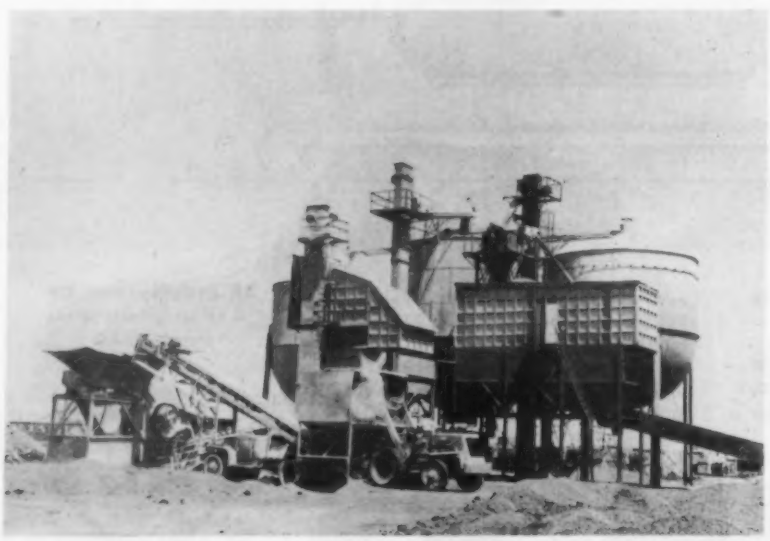
From the discharge end of the above units, the clinker drops into a concrete cooling pit, where it is allowed to cool gradually. It is removed about 4 times daily by a ¾-cu. yd. Buckeye clamshell for transfer to stockpile. The latter is maintained at about 10,000 cu. yd.

Clinker is removed from the stockpile by front-end loaders and dumped into the feed hopper of the primary clinker crusher — a 24- by 30-in. Pioneer jaw unit. After reduction to a top size of minus 1-in., the material is chuted to a belt conveyor on which it is conveyed to the secondary crushing phase. There it is further reduced to a top size of ⅜-in. in an 18- by 30-in. Pioneer roll crusher.

Discharge from the latter unit is elevated to a Simplicity 4- by 12-ft. triple-deck screen on which the screencloth is varied in accordance with the various aggregate sizes desired. When necessary, the secondary roll crusher may be by-passed by a part or all of the flow from the primary crusher, which is then screened for separation of a ¾- by ⅜-in. fraction. Larger sizes are chuted to the secondary crusher, and followed by further screening in closed circuit.

From bins below this screen the material may be trucked to other operations or chuted to the boot of an elevator in which it is raised to a distribution point above three storage tanks. Distribution of separate size ranges is accomplished with a reversible conveyor. For production of lightweight mortar sand, larger sizes are drawn from storage and fed to a Williams No. 215 reversible impactor, where the clinker is reduced to ⅜ in. down to dust at the rate of 30 cu. yd. per hour.

The hammermill product is elevated to a Williams 6-ft. mechanical air separator, where minus 100-mesh material is removed—the balance being fed to a company-designed triple-deck screen mounted over truck bins. With the above separate screening phases, production can be readily varied between block and concrete aggregates, and mortar sands.



The lightweight aggregate crushing and screening plant. Clinker is moved from the stockpile to the hopper of the primary clinker crusher by front-end loaders.

Not only does the lightweight aggregate plant supply the block production, but also the ready-mix plant and the precasting yard. An increasing amount is also finding its way into Barrett's pipe production. The units made have easily met A.S.T.M. specifications for lightweight aggregate pipe. It has been found that the use of some of the minus 100-mesh material as an admix in the pipe operations has improved workability, and has apparently provided some pozzolanic action. The latter is currently under extensive testing in the plant laboratory, and results of this investigation have been encouraging according to company officials.

In supplying the various operations above, the lightweight aggregates are trucked from the respective bins and storage tanks and dumped into the feed hoppers of the separate plants. No aggregate other than Barlite is used in the production of concrete masonry units, of which 125 different sizes and shapes are marketed.

Both the lightweight aggregate and sand and gravel are consumed in the manufacture of Barrett pipe, as well as in the ready-mix plant. In addition to pipe of various diameters and lengths, the pipe plant also produces precast tongue-and-groove manhole sections 4-ft. in diameter and in lengths from 1 to 3 ft.

Ready-mixed concrete produced by the company has been delivered to major highway construction projects in the area, to building construction on military projects, and to private housing developments. Barlite concrete for structural use and for roofing has been provided at 100 lb. and 60 lb., respectively.

The quality of the lightweight aggregate produced, and the products in which it is used by Barrett Industries is evident in the widespread interest evinced and in the use of its materials. The firm has experienced a rapid growth in its dealer organization, which is spread over an area with a radius of 150 miles. Applications for dealerships have been received from many companies outside that area.

A large part of the growing recognition of the firm's products is due to the constant quality control maintained by the plant laboratory staff, which at regular daily intervals samples the lightweight aggregates being produced. Further testing, experimenting, and product development are in constant progress. For these operations, the laboratory has been equipped with a 200-ton Forney compression tester, strain gauges, gradation test sieve equipment, and a George H. Wahmann Company constant temperature closet.

A view in the laboratory. Shown here is the 200-ton compression tester.

Heading the energetic Barrett organization are Thurman Barrett Sr., founder, and his son Thurman Barrett Jr. Key positions in the operations are filled by William L. Barrett Jr., general production superintendent, and W. E. Overby is general sales manager.

3rd Plant to Raise Output Of Solite to Highest in Field

The new Solite Corporation plant at Leaksville Junction, near Danville, Va., is now officially under construction. On December 10 ground was broken by W. G. Shumaker, plant superintendent at the new facility.

Upon this occasion the promotion of John Bragg to assistant superintendent of the Solite plant at Bremo Bluff, Va., was announced. Mr. Bragg is replacing Mr. Shumaker.

The Southern Lightweight Aggregate Corporation is now producing Solite in Buckingham County, Va., and Stanly County, N. C. The addition of the Danville plant will bring total production to more than 1,000,000 cu. yd. annually, giving Solite the largest annual output in its field.

Practical methods of combatting embezzlements of money, merchandise, and other materials are described in a 32-page booklet, *Embezzlement Controls for Business Enterprises,* by Lester A. Pratt, C.P.A., nationally-recognized authority on fraud prevention. The booklet contains a check list for determining the adequacy of a firm's embezzlement controls. Available to employers, without charge, from Fidelity and Deposit Company, 2371 Fidelity Building, Baltimore 3, Md.

● The Grand Rapids Gravel Company, Grand Rapids, Mich., uses this Model 175A Michigan to strip sod on a job for a state highway department. The operator sinks the blade 6 to 7 in. into the sod, and then either windrows the sod in 200 to 300 ft. piles or scoops it up for dump trucks.

DURACLONE
. . . . First Choice of Sand Producers

● Last year, Marin Rock & Asphalt Co., Novato, Calif., changed over from dry road-material production to washed and sized aggregates.

● *Loss of extremely fine sands in the classifier overflows made it difficult to meet rigid state specifications—until the management installed two 25-in. DURACLONES.*

● Now, handling about 2400 g.p.m. by way of two 6-in. RU rubber-lined pumps, upwards of 50 tons of clean fines are being recovered daily to "sweeten" the sand gradation, insuring marketability, and saving money.

● *DURACLONES are specifically engineered for this service in the sand-and-gravel industry. More DURACLONES are being installed by aggregate producers than any other type of wet cyclone—proof of their remarkable ability to wring the last ounce of fine, clean sand from wash-water wastes.*

● Completely rubber-lined, DURACLONES are sold on a guaranteed-performance basis when installed as directed. If your finished sand is deficient in the minus-50-mesh range, a DURACLONE can probably correct the trouble. In addition, the market value of the sand you save will quickly pay for it. Send the coupon below for information, NOW!

H. B. Large Engineering Co.
262 S. Parkwood Ave.
Pasadena, Calif.

Please send DURACLONE information to:

NAME_____

ADDRESS_____

OUR OVERFLOW WATER IS APPROXIMATELY

_____G.P.M.

Expansion at Bessemer

(*From page* 142)

Another Airslide feeds to the 16-ft. Sturtevant separator. Coarse material is returned to the mill feed inlet, and fines go to an 8-in. Fuller-Kinyon pump as finished cement. The material carried by the cooling air from the separator goes to a Buell L R collector, followed by a 21,000-c.f.m. Sly Dynaclone collector. The dust from the Buell collector goes back to the elevator and separator. The fine dust from the Dynaclone is carried by screw conveyor and spout to the cement pump.

The entire mill building is kept clean through regular use of a U. S. Hoffman vacuum cleaning system. There are connecting outlets every 25 ft. on each floor of the building. Air for the cement pumping system is supplied by a Fuller C300 rotary compressor located near it. A Farval automatic lubricating system is used on each mill gear.

Cement Handling The cement is pumped through an 8-in. line 1,500 ft. long to the top of the new bulk-loading silos. Built by the Macdonald Engineering Co., the nine silos—in three rows of three each—and three of the four interstices have a storage capacity of 175,000 bbl. The silos are 33 ft. in interior diameter and 80 ft. high and have 45-deg. conical bottoms. The silo roof is 132 ft. above ground level. The fourth interstice is used for an elevator and stairs. Under each row of silos is a Howe scale with a Mechanoprint recorder, on which the actual loading is done. Two of the scales have 10-ft. by 60-ft. platforms for truck loading. The other has a 50-ft. platform and can be used for either car or truck loading. Pushbuttons control the loading from a Fuller-Kinyon control board in a room on the ground floor.

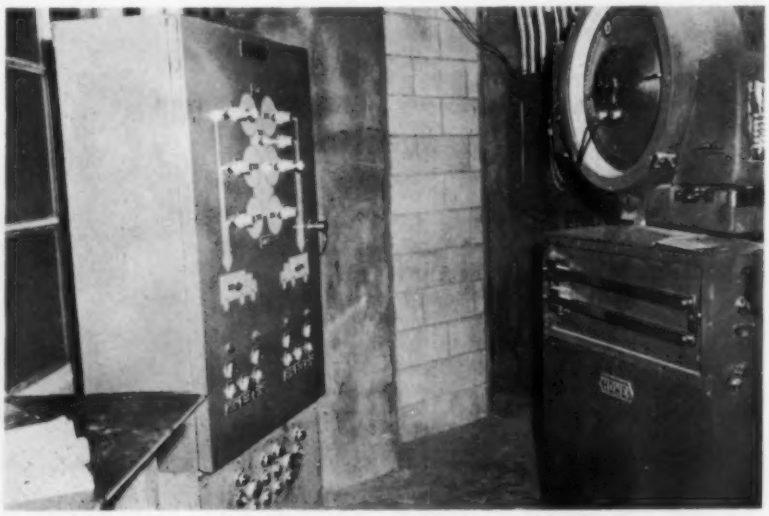
Each of a row of three silos unloads *via* Airslides to a central loading spout, so that the vehicle can remain on the scale while being loaded. Dustless loading is made possible by the use of a telescopic loading spout which is raised and lowered by an air cylinder. This spout is enclosed by a larger rubber spout, and the system is under suction to a Sly Dynaclone dust collector on top of the silos. A second Dynaclone dedusts the air from the cement conveying system.

RODNEY G. KAUFFMAN has been promoted to the position of assistant eastern manager of the Southwestern Portland Cement Company, Fairborn, Ohio. Mr. Kauffman was formerly sales manager of the Eastern Division.

EDWARD L. HIGGINS, who has been assistant sales manager, was appointed eastern sales manager to fill Mr. Kauffman's former position.

EDWARD C. MCGINNIS has been named to succeed Mr. Higgins as assistant sales manager.

ROBERT F. HALL has been appointed technical service director of the Calcium Products Division of the Georgia Marble Company, Tate, Ga. Mr. Hall will make his headquarters at the division's Central Laboratories in Tate.



The dials and recorders for each of three scales, and also the cement flow control board, are located in the bulk-loading scale house.

General Electric Gear-Motors Prove Reliability in Continuous Conveyor Operation

For increased productivity, reliable drives are important in maintaining a constant flow of materials through your plant. With General Electric gear-motors you can expect the same dependable service experienced by a large southeastern cement plant. There, G-E gear-motors driving the conveyor system, operate continuously. In five years these motors have required no maintenance other than infrequent oil changes.

In addition, General Electric gear-motors give you several other bonus features:

EASY INSTALLATION—Alignment is simple because unit is on a single base with gears properly lined up and locked in place at the factory before shipment.

LESS MAINTENANCE—Down time is reduced because gear-motors do not require the frequent inspection and replacement common with other methods of speed reduction.

QUIET OPERATION—Balanced distribution of the load throughout the unit means less noise.

MORE COMPACT—Packaged gear-motor design accomplishes speed reduction in a minimum of cubic feet, saves valuable space.

General Electric's new decentralized Gear Motor and Transmission Components Department is devoted solely to the design and manufacture of all types and sizes of gear-motors. For more information write for bulletin GEA-6027, Section 851-3, Schenectady, N. Y., or contact your G-E Apparatus Sales Office or nearest gear-motor supplier. *Gear Motor and Transmission Components Department, General Electric Co., Paterson N. J.*

WHERE GEAR-MOTORS CAN SAVE YOU MONEY*

**A partial list of many possible applications.*

CONVEYORS—belt, assembly, bucket, chain or screw.

FEEDERS—both belt and screw.

ELEVATORS—buckets under heavy or uniform load and centrifugal or gravity discharge.

AGITATORS, MIXERS AND SCREENS—for both liquids and solids.

CRANES AND HOISTS—heavy duty main hoists and skip hoists, for travel motion and trolley motion.

Progress Is Our Most Important Product

GENERAL ELECTRIC

RAYMOND BOWL MILL Direct Firing Unit

for

- Efficient pulverization
- Maximum kiln firing economy
- Low power and maintenance costs

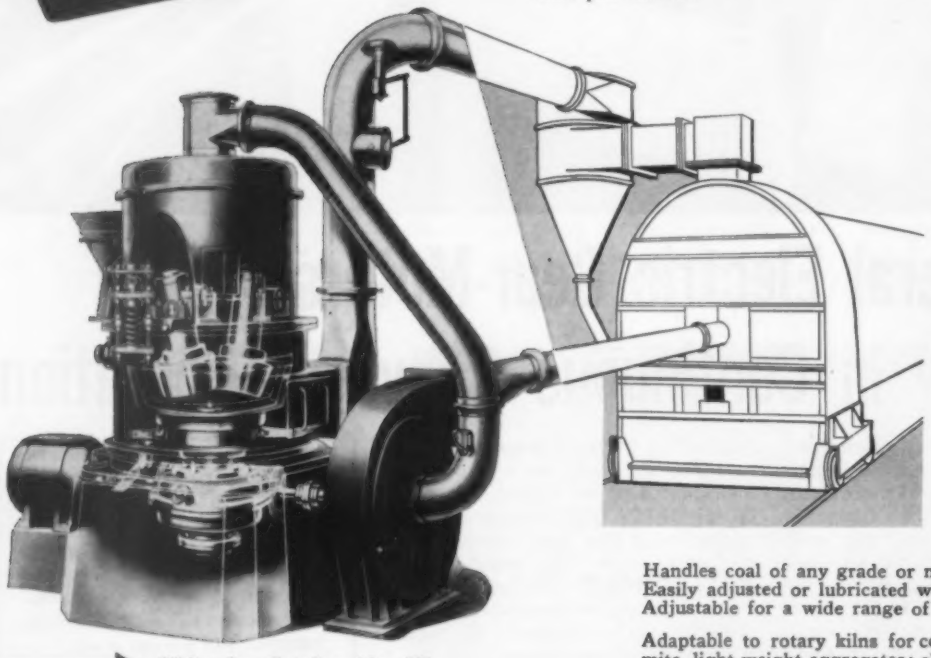
VISUAL CONTROL PANEL

Shows a continuous operating picture of the Bowl Mill . . . several mills may be handled as easily as a single unit.

RAYMOND Bowl Mill Firing has become a potent factor in modern cement production, as attested by top-level performance records in hundreds of installations, totaling a rated capacity of more than 16 million tons of pulverized coal annually for the cement, lime and dolomite fields alone.

The Bowl Mill provides a complete, fully coordinated system with flexible control and automatic operation. It is built for 24-hour continuous operation, and month-after-month service is assured by positive lubrication, absence of vibration and automatic rejection of foreign material.

Let Raymond Bowl Mill Firing become a part of your planned economy for the year ahead. It will help to improve your cement quality and reduce the overall cost per barrel.



Proper coal-air mixture is maintained with Bowl Mill Firing for efficient burning and maximum kiln efficiency.

Handles coal of any grade or moisture content. Easily adjusted or lubricated while operating. Adjustable for a wide range of capacity.

Adaptable to rotary kilns for cement, lime, dolomite, light weight aggregates; also for industrial furnaces.

→ Write for Catalog No. 75

COMBUSTION ENGINEERING, INC.

Raymond Division

1321 North Branch St.
CHICAGO 22, ILLINOIS

SALES OFFICES IN PRINCIPAL CITIES

Combustion Engineering-Superheater Ltd., Montreal, Canada

5 products at a time... crushed, screened and washed

300 tons per hour... with 35% crush

Minimum labor required... all-electric operation

. . . that's why Genesee Sand & Gravel Company SELECTED ALL CEDARAPIDS EQUIPMENT

When a producer opens up a new pit, his prime concern is to get into big-volume production fast, with mininum labor . . . that's why he's mighty glad to have a high-capacity, easily set up plant like this portable Cedarapids Commander — Wash-All combination. 3000 tons a day of five sizes of accurately graded gravel and sand *is profitable operation!*

For Genesee Sand & Gravel Company's new plant, President Henry Jaeger, Jr. selected a Cedarapids Commander, a Wash-All plant, 5 portable stockpiling conveyors, and a 540-ft. sectional feed conveyor fed by a Cedarapids reciprocating feeder and hopper. The plant is completely electrified and equipped throughout with Cedarapids Motorized Head Pulleys to reduce labor and maintenance requirements.

Genesee moved into the new pit near Genesee Depot, Wisconsin, on October 2. By October 15 they were in production and are now turning out . . .

Mason sand	**8 mesh and under**	**5%**
Coarse sand	**¼" to 8 mesh**	**50%**
Pea gravel	**⅜" to ¼"**	**2%**
No. 1	**¾" to ⅜"**	**22%**
No. 2	**1½" to ¾"**	**21%**

Whether you're an experienced, well-established producer like Genesee Sand & Gravel Co., or just entering the field, you can depend on Cedarapids equipment for the high capacity, low maintenance performance that spells profitable operation in your specific job. Ask your Cedarapids dealer about Cedarapids equipment for your job.

Cedarapids Commander—The completely electric Commander crushing and screening plant in Genesee Sand & Gravel Company's new pit is equipped with spray bars on the screen and a sand screw attachment which delivers mason sand to the sand classifier. All other crushed and screened material discharges into the Wash-All Plant.

Cedarapids Wash-All—Coarse sand and three sizes of gravel are screened and washed in the Cedarapids all-eleciric Wash-All. The coarse sand is taken out by the twin-screw washer-classifier-dehydrator, while each size of crushed gravel is stockpiled with a portable conveyor. Note Motorized Head Pulleys on all conveyors in the entire plant.

Cedarapids — Built by IOWA

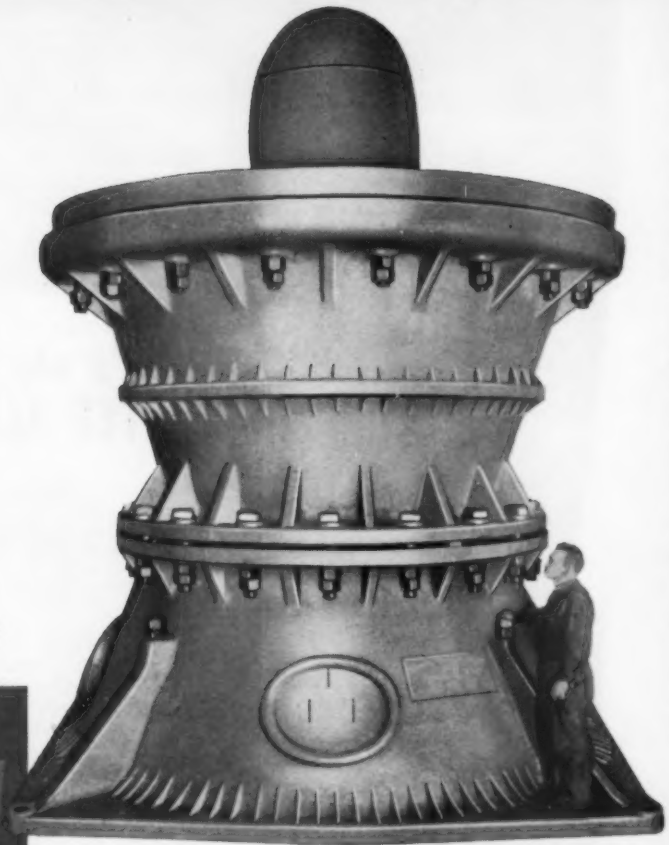
IOWA
MANUFACTURING COMPANY
Cedar Rapids, Iowa, U. S. A.

KENNEDY GEARLESS

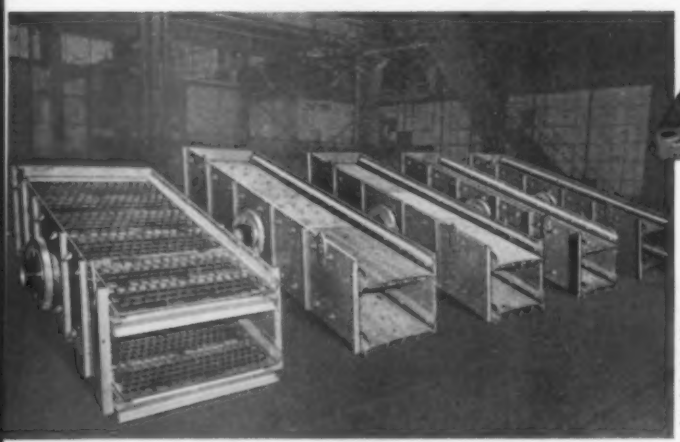
PRIMARY AND

KENNEDY PRODUCTS

- Gyratory Crushers
- Swing Jaw Crushers
- Tube Mills
- Ball & Rod Mills
- Vibrating Screens
- Rock Feeders
- Air Swept Tube Mills
- Rotary Kilns
- Coolers, Dryers
- Preheaters, Deheaters
- Belts, Conveyors
- Pneumatic Transport Systems
- Waste Heat Boilers
- Pulverized Coal Firing Systems
- Steam Generators
- Asbestos Plants
- Complete Lime Plants
- Complete Cement Plants
- Complete Aggregate Processing Plants



#42 KVS Primary Gearless Gyratory Crusher with cast steel frame.



Kennedy cataract type AAA vibrating screens. Available in single, double, triple deck models. Heavy Duty Two-Bearing design simplifies installation and reduces maintenance.

Send for bulletins describing KVS world-famous Machinery and Equipment.

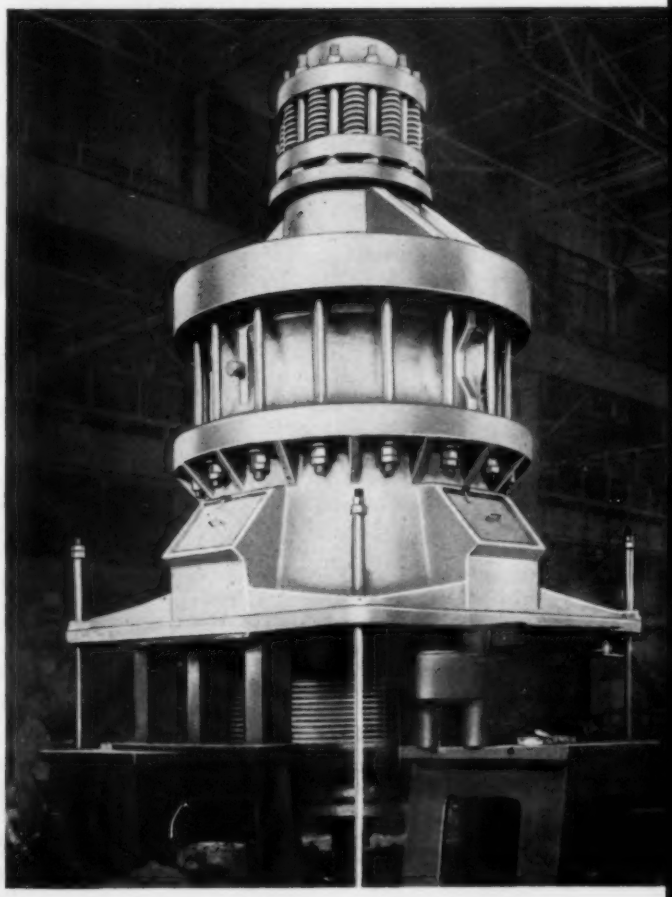
KENNEDY-VAN SAUN

GYRATORY CRUSHERS

SECONDARY

Noted for their efficiency in crushing Limestone, Slag, Dolomite, Iron Ore, etc.

Mining, Quarrying, Cement, Lime and Chemical concerns throughout the world, depend on Kennedy crushers to handle hard-to-crush rock and ore. Kennedy Gearless Crushers are built in the widest range of sizes and capacities in the world, featuring built-in synchronous motor or V-Belt drive, self-aligning eccentric, roller bearings carrying rotating parts, automatic pressure lubrication system.



#61, type "S" KVS secondary Gearless Gyratory Crusher, V-belt drive.

MANUFACTURING & ENGINEERING CORPORATION
TWO PARK AVENUE, NEW YORK 16, N.Y. • FACTORY, DANVILLE, PA.

Conveying cement from silos to bulk-cement truck.

Conveying cement from silos to hopper-bottom car.

Airslides conveying cement from finish mills to five (one not visible) Fuller-Kinyon Pumps. Pumps convey cement to storage silos.

Airslide underneath storage silo. Fuller rotary valve under cone of silo for control of discharge to Airslide. Note branch Airslide, left, with automatic control gate.

AIRSLIDES . . .
everywhere you look!

Everywhere you go, wherever dry fine materials are being handled, you will find more and more F-H Airslide® fluidizing conveyors being put to work. And, there are many sound reasons for its universal acceptance. What other conveyor gives you all these advantages:

- No moving parts
- No lubrication
- Low-power consumption
- Air at low pressure
- Noiseless and dustless operation
- Permits flexibility of plant design
- Reduces labor charges for repairs and replacements
- No large stock of repair parts
- Ease of erection, light in weight

Result: production flowing smoothly at minimum expense.

The Airslide can be used singly or in combination with other Fuller conveying systems, such as the Airveyor® or Fuller-Kinyon Pump.

If your operation involves conveying of dry fine materials, take a step forward and consult us. Fuller engineers can show you, as they have others, how the Airslide can "carry the load" in a way you never thought possible. For details write for descriptive bulletin FH-2B.

AIRSLIDES CONVEY

Alum • Alumina • Aluminum Oxide • Arsenic Oxide • Asbestos Dust • Asphalt Fillers • Barite • Bauxite • Bentonite • Borax • Calcium Carbonate • Carbon Black • Cellulose Acetate • Cement, Portland • Cement Raw Material • Chalk • Chromite • Clays • Coal, pulverized • Coke Dust • Copper Converter Dust • Cottonseed Meal • Detergent Powders • Dextrin • Feldspar • Fertilizers • Flour • Flue Dusts • Fluorspar • Fly Ash • Fuller's Earth • Gypsum (raw or calcined) • Ilmenite • Lime, hydrated • Lime, pulverized • Limestone, pulverized • Litharge • Magnesium Oxide • Manganese Dioxide • Ores, pulverized • Petroleum Coke (Fluid process) • Phosphate Rock, pulverized • Pyrites • Quartz, pulverized • Resins, synthetic • Salt Cake • Semolina • Silica, pulverized • Slag, pulverized • Slate, pulverized • Soap Powders • Soda Ash • Sodium Bicarbonate • Sodium Phosphates • Starches • Talc • Zinc Oxide.

FULLER COMPANY
100 Bridge St., Catasauqua, Pa.

FH-59
3001

SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION
Chicago • San Francisco • Los Angeles • Seattle • Kansas City • Birmingham

DISCOVER DAVIS

THE EQUIPMENT THAT LEADS THE WAY

close in DESIGN

saves stockpiling TIME

Davis Loader and Back-hoe combination with shovel bucket turns unit into power shovel machine. Cab is optional.

Davis Back-hoe is available as quick detaching truck-mounted job — freeing truck for normal hauling jobs.

The Davis Loader was born a leader—introducing more profit-making features than any other loader, and particularly versatile in stockpiling and stripping operations. In design alone it stands out—with no part above, below, or beyond the dimensions of the tractor—to give it unequalled maneuverability and visibility. Rugged, box-frame construction with strength added where strength is needed puts all of its weight to work for you. Steel sleeves in the positive, non-settling valve, oil filter—standard only on Davis, centralized reservoir, down pressure, flame-hardened ram shafts, new pump mounting and pump drive are just a few of the features that make it last longer, and perform more efficiently. Back-hoe mounting brackets are standard on most models. It's America's quality loader...yet competitive pricewise to ordinary loaders.

Davis Loaders and Back-hoes are available for most popular tractors. Sold and serviced everywhere in U. S. A. and Canada by better dealers.

FOR NAME OF NEAREST DEALER CALL WESTERN UNION BY NUMBER, AND ASK FOR OPERATOR 25

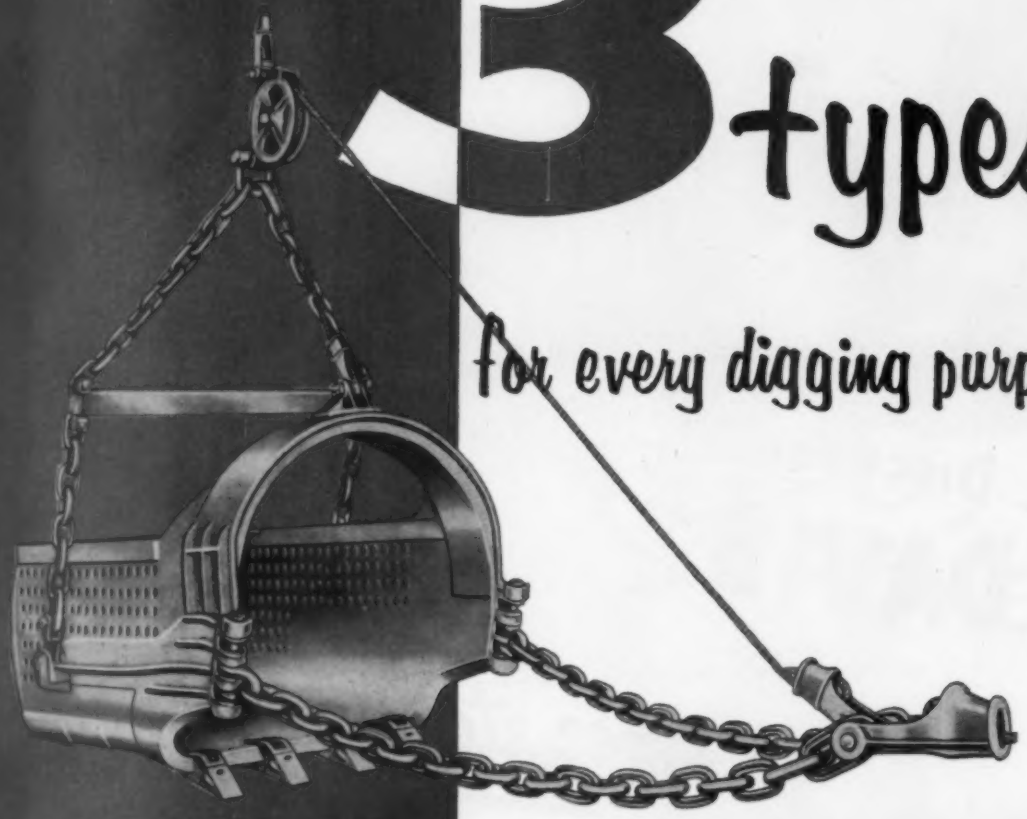
...or write direct

MID-WESTERN INDUSTRIES, INC.

1009 SOUTH WEST STREET, DEPT. Q WICHITA 15, KANSAS

3 types

for every digging purpose



All Hendrix Buckets available without perforations

¼ to 40 Cubic Yards

Hendrix Lightweight DRAGLINE BUCKETS

HENDRIX MANUFACTURING COMPANY, Inc.

MANSFIELD, LOUISIANA

TYPE "LS" . . . *Lightweight*

A lighter weight bucket designed for levee and drainage work

TYPE "TS" *General Purpose*

Unexcelled for Medium-Duty Service

TYPE "HS" . . *Heavy Duty*

A heavy-duty bucket for moving shale, blasted rock and other hard formations

Intermittently all day long, Tournatractor dozes iron cinders to clamshell bucket on overhead crane. It also dozes in the limestone, shale, and gypsum . . . completes job in a few minutes.

"Runs wherever it is needed"

Rubber-tired tractor does a dozen jobs a day at Canadian cement plant

When one of Canada's largest cement manufacturers expanded its operations, their one crawler could no longer handle all the tractor jobs around the yard. Since some of these jobs were a half-mile apart, they either had to buy another crawler, or get a faster machine that could do the work of 2 crawler-tractors.

A similar problem had arisen before, and they found satisfactory solution in a 17 mph rubber-tired Tournatractor.

"Tournatractor goes anywhere fast," explains the general mill foreman. "It will work here a while, then at another location. It runs to wherever it is needed!"

Spots 100-ton rail cars

One of the Tournatractor's most frequent jobs is spotting railroad cars, some empty, some loaded with 100 tons of cement. It can easily push a dozen empty cars, the mill foreman says. He doesn't know how many loaded cars it can handle, since it has never been necessary to move more than one at a time. "We have had cars off the track, though," he points out, "and Tournatractor pushes them back on without any trouble. One thing we especially like is the way it goes across tracks. A crawler will tear the blazes out of ties and rails, but those soft tires do not hurt them at all."

Maintains haul roads

Tournatractor's Angledozer blade is especially useful for grading the half-mile haul road from the pit. Trucks braking down the mountainside create a washboard effect in the road. Instead of riding up and down on these ridges as an ordinary dozer blade tends to do, Angledozer slices crosswise through them. Angle of cut, plus down-pressure, keeps blade from bouncing.

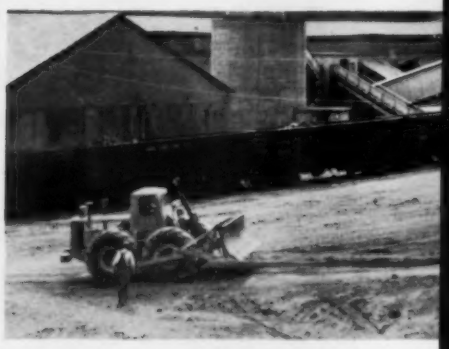
"On this work," mill foreman continues, "Tournatractor makes 3 or 4 trips up and down the road while a crawler would make only one."

Another important advantage of Tournatractor that the foreman mentioned was that its tires gave a lot more mileage than did crawler tracks. "You put 35% of your wear on a crawler just in driving job-to-job," he says, "while traveling doesn't hurt Tournatractor tires."

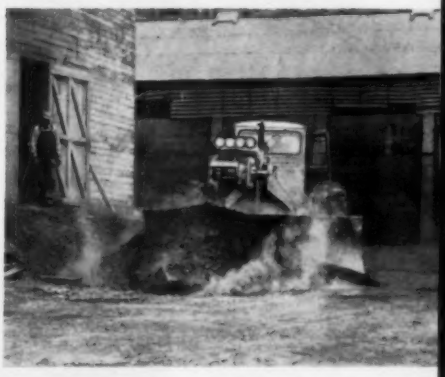
Write for details on how Tournatractor can help cut costs for you.

Some of the jobs this one Tournatractor does

1. Stockpiles coal
2. Grades and gravels half-mile haul road
3. Dozes 100 tons of gypsum per day into hammermill
4. Spots railroad cars
5. Backfills quarried-out spots in the yard
6. Bulldozes the waste dump
7. Handles all clean-up for shovel in old pit
8. Cleans up for shovel in new pit when crawler is down for repairs or can't keep up with work
9. Moves machinery
10. Cleans up yard
11. Stockpiles iron cinders, limestone, and gypsum
12. Feeds iron cinders to clamshell in plant
13. Pushes derailed cars back on track
14. Plows snow from haul roads and plant area



One of Tournatractor's service jobs is to grade and gravel mountain haul road. Half-mile uphill trip takes only about 5 minutes. Rubber tires do not tear up roadway, can go anywhere. Machine frequently enters plant for service work where crawlers could not be used.



Tournatractor makes fast work of tearing down a ramp. One of its most important jobs is to keep haul road and yard free of limestone chunks dropped by trucks. Rock, which frequently wedges in and damages dual truck tires, does not injure tractor's big single tires.

Stockpiling and feeding of gypsum to hammermill is another daily task for Tournatractor. These and the finer abrasives, like cinders, do far less harm to the rubber than they do to tracks, says the plant's master mechanic.

Tournatractor, Angledozer—Trademark Reg. U.S. Pat. Off. T-366-Q-bww

LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

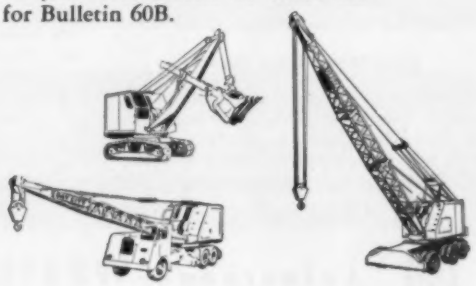
WHERE QUALITY IS A HABIT

MORE POWER ~~TO~~ *for* YOU!

How the EXTRA POWER in the NEW BAY CITY ONE YARD SHOVEL HELPS YOU

260

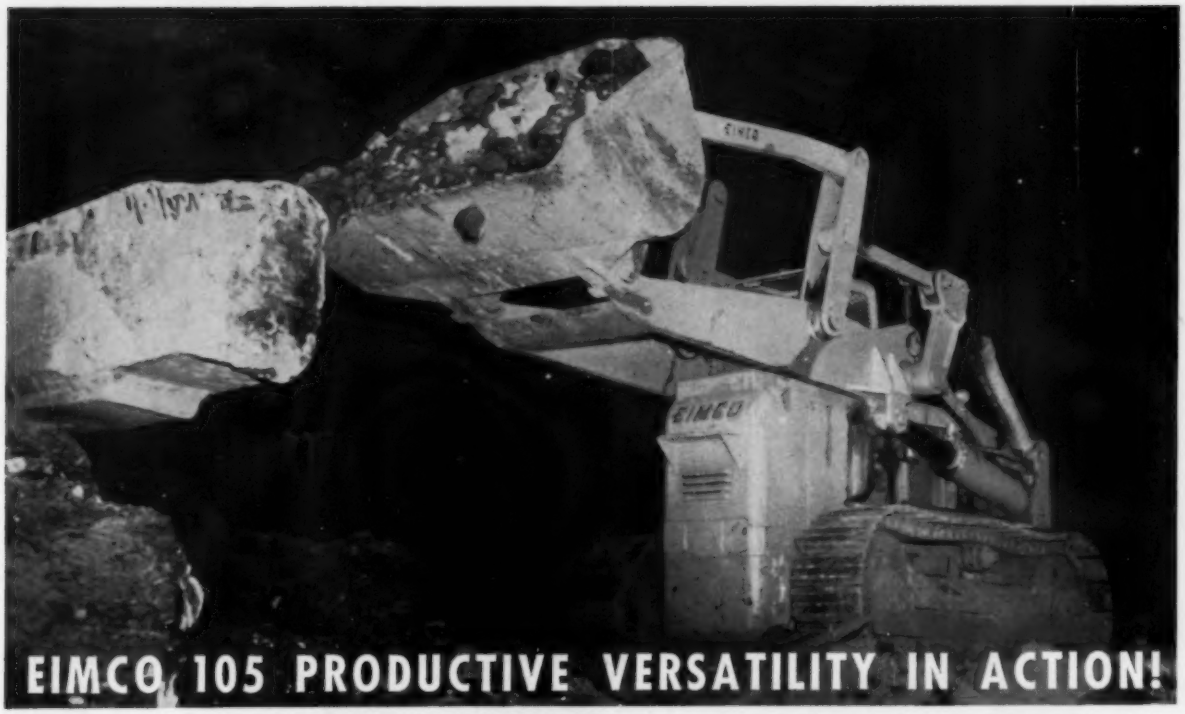
The *greater power* and greater strength built into the new heavy-duty BAY CITY one yard-shovel results in smoother, faster operation for you. There's *greater power in the engine:* a big 113 H.P. Diesel assures you of the ability to get in and out of tough places, to dig hard materials with ease, and to maintain a fast, smooth digging cycle. *Power steering* through cone clutches which actuate brakes, gives you superior maneuverability: you can make sharp or gradual turns in either direction while the machine is in full motion . . . you don't have to stop to throw out jaw clutches or set steering brakes. *Power Boom Hoist* on the BAY CITY raises and lowers boom always under power, and the *Power Dipper Trip* makes dumping much easier and much faster. In addition, the BAY CITY has *Power Booster Clutches* which take fatigue out of operating and give you bigger yardage. Put this powerful BAY CITY to work. Get further information today, from your local dealer or write the factory for Bulletin 60B.



BAY CITY SHOVELS INC. • BAY CITY, MICHIGAN

BAY CITY

SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS



EIMCO 105 PRODUCTIVE VERSATILITY IN ACTION!

NEW! FRONT END LOADER

Here's the latest addition to the 105 wide-range family of rugged earth-moving tools.

In loading applications where physical and haulage conditions make its use more practical . . . here is a front end loading mechanism that gives you extra strength for the most severe job.

Large, double-acting hydraulic boom cylinders provide ample power to hoist loads weighing up to 15,000 lbs. to full height. Boom and bucket controls may be operated simultaneously.

To fill the big (2½ yard) bucket, this loader develops 25,000 lbs. digging force at the lip. 40,000 lb. pry-out force and 40 degree bucket tip-back at ground level gets full bucket loads, minimizes spillage. It carries loads close and low for maximum stability.

It operates in 9' 6" headroom . . . discharges into haulage units up to 14'.

Exclusive features of the hydraulic system provide an extra margin of protection against mechanical delays.

Bulldozer

Dozer blade attachments are designed to make full use of the extra-production features of the 105. In broad usages such as cutting haul roads for logging outfits . . . pioneering in shale and hard rock . . . clearing fire paths for the Forest Service . . . the Eimco 105 Bulldozer has proven its high-capacity ability the world over.

All attachments are Eimco-built to standard SAE mounting dimensions for the basic 105 Tractor. This means extra performance from every attachment through independent track maneuverability . . . up front visibility . . . power shift operating ease . . . balanced design for maximum stability . . . quality built for dependable on-the-job service.

Excavating Loader

Where digging is extra tough . . . and haulage provisions can be adopted to take full advantage of overhead discharge — the time-proven 105 Excavating-Loader will give you **bonus** loading power at the bucket lip and **bonus** dumping speed to accelerate the entire cycle.

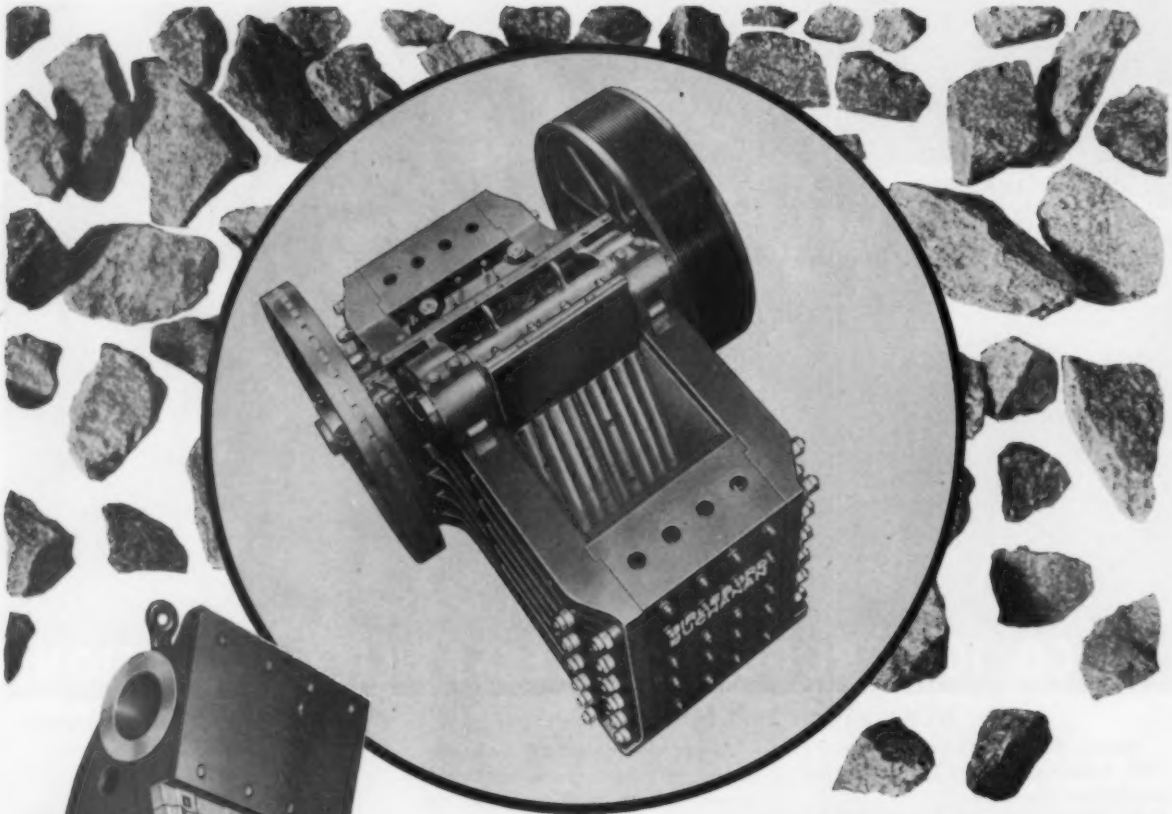
Unique contour of the rugged rocker arms . . . bucket design and smooth, steady flow of engine power transmitted to the bucket lip through the torque converter gets 39,200 lbs. of digging force right where you want it . . . in the pile. Awkward maneuvering to get into dumping position is eliminated in ideal overhead discharge applications.

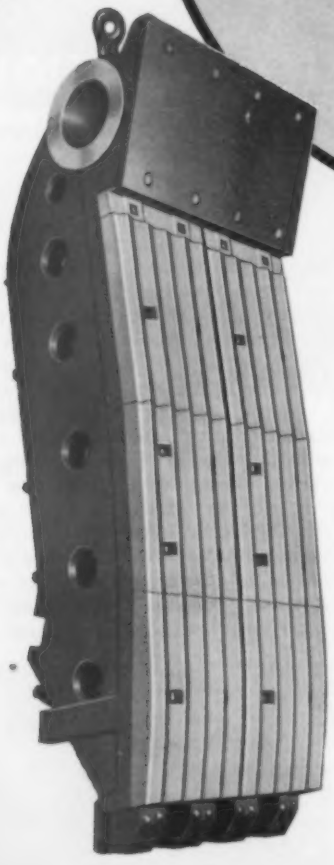
THE EIMCO CORPORATION

Salt Lake City, Utah—U.S.A. • Export Offices: Eimco Bldg., 52 South St., New York City

New York, N. Y. Chicago, Ill. San Francisco, Calif. El Paso, Tex. Birmingham, Ala. Duluth, Minn. Kellogg, Ida. Pittsburgh, Pa. Seattle, Wash.
Cleveland, Ohio Houston, Tex. London, England Gateshead, England Paris, France Milan, Italy Johannesburg, South Africa

B-339



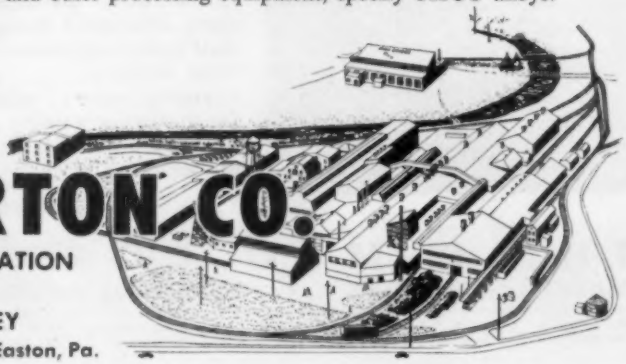


TOUGH TISCO®

Birdsboro-Buchanan Crusher Parts

Jolting impact and punishing abrasion are the destructive one-two punch of every stone-crushing operation. Obviously, a "pretty good" steel cannot stand up consistently and profitably under this constant sledgehammer pounding. That's why impact and abrasion resistant TISCO Manganese Steel jaw plates are used in Birdsboro-Buchanan Crushers. TISCO jaw plates last longer, keep production levels high, maintenance low.

Founded in 1742, Taylor-Wharton, the Original Producers of 12 - 14% Manganese Steel in America, has the know-how and experience in making special alloy steels with top impact and abrasion resistant properties. To find out how tough TISCO Manganese Steel alloys can up the output and decrease the down-time of your Jaw Crushers and other processing equipment, specify TISCO alloys.



TAYLOR-WHARTON CO.

DIVISION OF HARSCO CORPORATION

Established 1742

HIGH BRIDGE 3, NEW JERSEY

Cincinnati, O. — Birmingham, Ala. — Easton, Pa.

POWER Aplenty

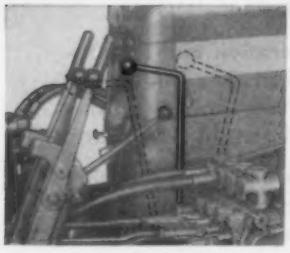
for Many Jobs...at New Low Cost

JOHN DEERE Crawler TRACTOR

COMPACT, powerful, and low in first cost, the "420" Crawler is built to deliver years of dependable service at very low cost per hour. Ruggedly built. Easy to start. About 30 engine horsepower. Fewer parts to wear. Easily serviced. Very low fuel consumption. Track shoes to fit your needs. Optional equipment includes "live" single or double hydraulic system, direction reverser, new 3-point hitch for rear-mounted equipment, and 5-speed transmission. Wide choice of matched working equipment, including front-end loader, at left.

JOHN DEERE Utility TRACTOR

THIS wheel-type power unit can boost your profit margin on many kinds of work. Low in first cost. Low in upkeep. Remarkably low in fuel costs. Cuts "down time" to a minimum because of simple, rugged construction. Highly maneuverable. Built low; has unusual stability when carrying loader, backhoe, or similar equipment. Optional equipment includes direction reverser, 5-speed transmission, and power-adjusted rear wheels. Shown at left with loader and backhoe.



TIME-SAVING Direction Reverser

A REAL time-saver. Optional for Crawler and Utility tractors. Lets you move forward or backward in same speed without shifting transmission gears. Investigate—you can save as much as an hour a day in travel time on loading, dozing, and many other jobs! Now ready for you!

Get further information from your nearest John Deere industrial dealer. See the classified section of your phone book.

JOHN DEERE Industrial Tractors and Equipment

Backed by nearly 40 years of tractor manufacture for dependable service and quality.

Send for FREE LITERATURE

JOHN DEERE INDUSTRIAL DIVISION
Moline, Ill., Dept. D 58 B

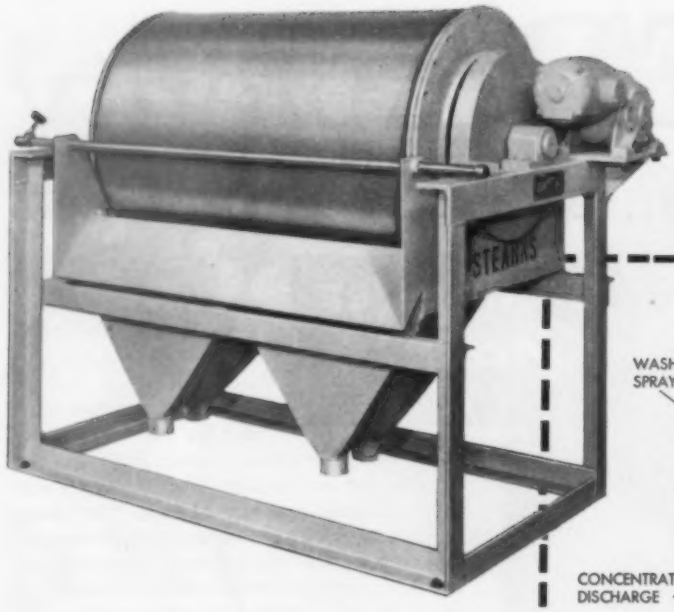
Please send me your illustrated booklet on John Deere Industrial Tractors and Working Equipment. Include name of nearest dealer.

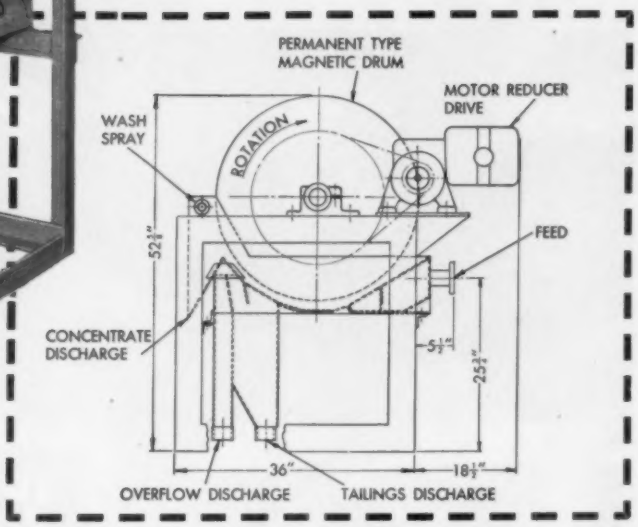
Name_____

Title_____

Address_____

City_____ State_____





FOR HEAVY MEDIA RECOVERY...

STEARNS offers the WPD magnetic separator

Here is the Stearns type WPD Model M magnetic separator — a powerful, new wet-drum permanent magnet unit designed for efficient recovery of media in heavy density plants.

The specially-designed magnet provides a deep, powerful field, with correct flux distribution for positive transport of the collected magnetics to the discharge point. Both of these factors mean highly efficient magnetic recovery for the type WPD separator.

Designed to give you high recovery of magnetic media at low cost

Low Operating Cost — Powerful Alnico permanent magnet requires no external energization — eliminates cost of rectifier or motor generator set.

Power requirements for driving drum are low because drum turns on anti-friction bearings—yet plenty of power is available when heavy load occurs.

Non-magnetic drive components do not attract magnetic particles, thus reducing wear on chains and sprockets.

Steady Material Flow — Separator tank and feeder are designed to distribute feed uniformly across the entire drum width at a point where maximum media recovery is assured. Concurrent feed keeps wear and abrasion on cylinder to a minimum and improves purity of magnetic concentrate.

Concurrent Feed Eliminates Wipers and Wash Spray — Feed flows in same direction as drum rotation, so any carry-over on drum is re-introduced to magnetic field. Wash sprays or wipers are optional if diluted concentrate is desired.

Utmost Simplicity in Operation and Maintenance — One man can control a number of units. Separator is easy to assemble and disassemble, requires a minimum of floor space.

High Gravity Concentrate — Magnet assembly squeezes out excess water and discharges concentrate with a solids content in excess of 60 percent in most installations.

The Stearns Type WPD magnetic separator is available in five drum widths, from 15 in. to 75 in. See your Stearns representative, or write for your free copy of Bulletin 2011-N. 25

STEARNS MAGNETIC PRODUCTS

635 South 28th Street • Milwaukee 46, Wisconsin

Illustration from Agricola's De Re Metallica (1621)

Arduous Work—Small Production

In centuries past, the production of metals could be measured by handfuls. Small wonder when comminution was done by a hammer and beneficiation was limited to hand-picking.

Fortunately, today's modern processing plants treat many tons of ore and produce many tons of metals, thus making possible our "metal age" civilization. This large production requires modern grinding methods which in turn utilize such grinding media as those produced by CF&I. The grinding balls and grinding rods produced by CF&I are *always* made from special analysis steels with the ideal balance between toughness and hardness to assure optimum grinding ability and maximum wearing ability.

THE COLORADO FUEL AND IRON CORPORATION CF&I 3695

Albuquerque • Amarillo • Atlanta • Billings • Boise • Boston • Buffalo • Butte • Casper • Chicago • Denver • Detroit • El Paso • Ft. Worth
Grand Junction • Houston • Lincoln (Neb.) • Los Angeles • New Orleans • New York • Oakland • Oklahoma City • Philadelphia • Phoenix
Portland • Pueblo • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane • Wichita • CF&I OFFICE IN CANADA: Toronto

The modern Conveyor Pulley for superior performance . . .

One tough application after another proves beyond doubt that you can't beat a lagged, Taper-Lock Steel Conveyor Pulley for the hard jobs! Here is the score on their use in rugged coke plant service. In this particular case the installation was on belts from the quencher and loading belts to cars. The report was made after *three years of use.*

1. **One-third saving on initial cost.**

2. **Saving on maintenance; no redressing of pulley faces.**

3. **No appreciable wear on lagging.**

In addition, these Taper-Lock Steel Conveyor Pulleys provide the further benefits which are inherent in their design:

1. **No bolts to shear.**

2. **Easy on — easy off.**

Taper-Lock Steel Conveyor Pulleys have terrific impact capability. All welds are made by the submerged arc process for 100% strength. Taper-Lock's patented back-up bar permits a weld of the full rim thickness to give 100% penetration. And there are no bolts to give way!

Normally available from stock in all face widths and diameters from 6 inches to 8 feet. *Write for bulletin.*

DODGE MANUFACTURING CORPORATION, 4000 Union St., Mishawaka, Ind.

CALL THE TRANSMISSIONEER your local Dodge Distributor. Factory trained by Dodge he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Equipment" or write us.

DODGE
of Mishawaka, Ind.

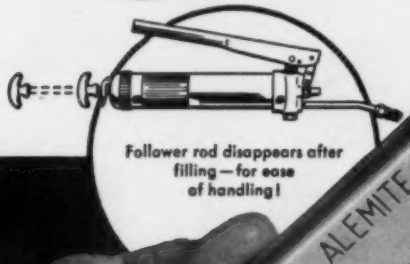
10,000 LBS. OF POWER

for even ordinary lubrication jobs!

FAST, EFFICIENT HEAVY-DUTY
ALEMITE HAND GUNS

Linkage is heavy steel for true piston alignment!

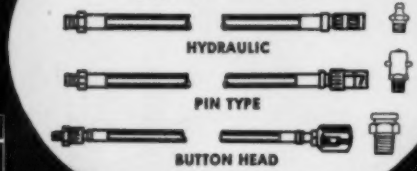
This rugged Alemite lever-type gun is packed with power and superior features for super performance in industrial lubrication! Develops 10,000 lbs. pressure . . . more than enough for ordinary lubrication jobs—with plenty of reserve power for "tight" bearings! Handles all regular pressure gun greases. Long-operating handle for maximum leverage. Loader fitting permits fast, clean filling (or gun may be filled by suction). Capacity, 1 lb., outlet, ⅛" p.t.



Follower rod disappears after filling—for ease of handling!

Heavy-duty Lever Gun Model 1056-SE

Loader fitting for fast clean filling with loader pump. No mess—no waste—no air pockets!



STEWART SW WARNER

ALEMITE

REG. U. S. PAT. OFF.

Division of STEWART-WARNER CORPORATION

Mail Coupon for FREE Catalog!

Alemite, Dept. L-37, 1850 Diversey Parkway
Chicago 14, Illinois

Please send me your complete catalog on Alemite lubrication equipment for industry.

Name_____

Company_____

Address_____

City_____ Zone____ State_____

TAKE A LOOK INSIDE

that's where the job gets done

Getting at the innards of a Pennsylvania Reversible Impactor takes only a few minutes. Just unfasten either top cover and swing it back on its hinges and you have the whole works right in front of you—hammers, breaker blocks, discs and all the rest. This not only makes replacement of any part an easy job, but a quick glance tells the story of just how things are behaving. You can't help but feel that the Impactor is a mighty crusher, and yet mighty simple, too. That's why this great crusher, the daddy of all impactors, leads installations everywhere over ten to one.

Not only did Pennsylvania Engineers originate the Reversible Impactor, but they led all others by originating such things as Adjustable Breaker Blocks (patented), Renewable End Disc Liners and the famous Pennsylvania Breaker Block Contour. The great developments in crushing design are still coming from Pennsylvania!

PENNSYLVANIA

REVERSIBLE IMPACTORS

PENNSYLVANIA CRUSHER DIVISION
Bath Iron Works Corporation
West Chester, Penna.

PE-248

More Information, Please

SERIES S BELT CONVEYOR IDLERS are described in a booklet released by the *Atlas Conveyor Company*. Idler construction is detailed and dimension tables on Series S return idlers and troughing idlers are included. (1)

THE OSHKOSH LINE of 4-wheel and 6-wheel drive trucks is introduced in a brochure available from *Oshkosh Motor Truck, Inc.* Application photos illustrate the varied uses, and features are explained. (2)

AN OPERATOR'S GUIDE for No. 988, No. 955, and No. 933 Traxcavators is offered by the *Caterpillar Tractor Company*. The booklet pictures the operating components found on all three Traxcavator models and explains in detail each phase of the complete operating cycle. (3)

A SPECIFICATION SHEET giving power curves, design details, engineering features, and installation drawings for the new high torque, heavy-duty "Jeep"-6 is available from *Willys Motors, Inc.* (4)

ASPHALT PLANTS AND EQUIPMENT are featured in a booklet published by the *McCarter Iron Works, Inc.* Semi-portable and stationary batch mix asphalt plants are described and pictured in different installations. Auxiliary equipment is included. (5)

RY-ALLOY OIL HARDENING TOOL STEEL is described in an engineering data bulletin available from *Joseph T. Ryerson & Son, Inc.* The literature contains information on typical installations, test results, and recommended heat treatment and forging practice. (6)

THE 2-LEVER-ARM CLAMSHELL, a product of the *Jos. F. Kiesler Company,* features a principle of leverage which allows equal distribution of power to both shells. This principle, plus other construction features, are explained in a folder offered by the manufacturer. (7)

HOW TRUCKERS SAVE through lower fuel and oil costs, plus longer engine life with fewer overhauls by using L-P gas is detailed in a new booklet available from the *Century Gas Equipment Company*. The firm's metering-valve carburetor system is also described. (8)

Use the prepaid postcard to get this literature or additional details about new equipment and products reported elsewhere in this issue.

MODEL 600 ROTARY BLAST HOLE DRILL, manufactured by the *Reich Brothers Manufacturing Company,* is the subject of a folder containing specifications, application photos, and features. (9)

THE P&H LINE, manufactured by *Harnischfeger,* is covered in Bulletin G-8-5. Power shovels, truck cranes, diesel engines, "single-pass" soil stabilizers, sierra elevating loaders, and welding equipment are included. (10)

CUMMINS RESEARCH DEFEATS DIRT! is the title of a folder explaining the new dirt-proofing system developed by the *Cummins Engine Company* for use in diesel engines on heavy-duty equipment. (11)

THE ANTHONY CONTINUOUS MIXER is discussed in a descriptive booklet published by the *William A. Anthony Engineering Company*. Capacities of standard mixers range from a few hundred pounds to 100 tons per hour. Single shaft mixers come in six models; double shaft mixers are available in three models. Capacities and horsepower of each model are given. (12)

SERVIS-RECORDERS for clocking idle time and productive time of equipment are reviewed in a booklet available from the manufacturer, *The Service Recorder Company*. In mine and quarry operations Servis Recorders are bolted to cranes, draglines, and trucks. (13)

FIRST CLASS
PERMIT No. 44
CHICAGO, ILL.

BUSINESS REPLY CARD
No Postage Stamp Necessary if mailed in the United States

THREE CENTS POSTAGE WILL BE PAID BY

Pit and Quarry Publications

431 South Dearborn Street

CHICAGO 5, ILL., U.S.A.

March, 1957

Please send more information on circled items described in this issue.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90										

In addition I would like information on:

_____

Name_____ Title_____

Company_____

Address_____

City_____ Zone_____ State_____

More Information, Please

Use the prepaid postcard to get this literature or additional details about new equipment and products reported elsewhere in this issue.

BERGSTROM MULTI-SERVICE MANGANESE TEETH are described in a folder available from the manufacturer, *Industrial Overlay Metals, Inc.* Bergstrom replaceable hammermill. (14)

THE 2,000-LB. CAPACITY HENRY INDUSTRIAL TRACTOR-SHOVEL is featured in a brochure published by the *Henry Manufacturing Company, Inc.* Features are diagrammed, and attachments are illustrated. (15)

HEAVY-DUTY FOUR- AND SIX-WHEEL DUMPERS, 15- to 34-ton capacity, are included in a new booklet released by *Mack Trucks, Inc.* Condensed specifications and photos of the models are contained. (16)

TRU-LAY VHS WIRE ROPE is reviewed in literature offered by the *American Cable Division, the American Chain & Cable Company.* Specifications for Tru-Lay VHS drag lines, scraper cables, shovel hoist ropes, arch lines, choker ropes, rotary drilling lines, slusher ropes, and winch lines are included. (17)

SHOVEL-CRANES—crawler, truck, and self-propelled models with ½ to 3 cu. yd., 8 to 75 ton capacities—are illustrated in a catalog offered by the *Link-Belt Speeder Corporation.* Eighteen models for various applications are pictured and described. (18)

THE 44 AND 45 SERIES OF PORTABLE CRUSHING AND SCREENING PLANTS is described in literature offered by *Pioneer Engineering.* Form 661 includes a cutaway illustration showing flow of material for simultaneous production of four product sizes. Form SED 32 gives complete specifications. (19)

"DO'S AND DON'TS FOR DIAMOND CORE DRILLING" has been revised and is available from the *Joy Manufacturing Company.* Over 200 operating tips ranging from care of bits to use of wrenches are listed in the booklet. (20)

MODEL 600 FULL-LINED SAND AND SLURRY PUMPS with metal and rubber interchangeable liners are described in Bulletin No. 601, published by the *Krogh Pump & Equipment Company, Inc.* Applications, construction, and design are discussed. A capacity chart and dimensions are included. (21)

CONVEYOR SCALES AND FEEDERS for weighing, totalizing, and controlling the flow of materials are featured in Bulletin 100, offered by the *ABC: Scale Division of the McDowell Company, Inc.* The bulletin contains diagrams, installation photos, and specifications. (22)

HIGH TENSION SEPARATORS are featured in Technical Bulletin HTB-103, published by *Carpco Manufacturing, Inc.* The bulletin lists typical minerals which can be separated by high tension units, contains a typical flowsheet for high tension separation, and describes a laboratory model and industrial separators. (23)

THE HD-6G DIESEL POWERED CRAWLER TRACTOR SHOVEL is highlighted in a booklet offered by the *Allis-Chalmers Manufacturing Company.* Matched attachments are shown through line drawings which depict them in action. (24)

FIREBRICK, HIGH ALUMINA, AND SPECIAL CORINDON BRICK are described in a bulletin issued by the *J. H. France Refractories Company.* Over 150 recommendations are listed for the company's complete line of firebrick. Specific installations are illustrated. (25)

VERTI-LINE CLOSE-COUPLED INDUSTRIAL PUMPS are discussed in a bulletin available from the *Layne & Bowler Pump Company.* Features are illustrated. Sectional views, material specifications, schematic application drawings, and photos of installations are presented. (26)

March, 1957

Please send more information on circled items described in this issue.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90										

In addition I would like information on:

_____

Name_____ Title_____

Company_____

Address_____

City_____ Zone_____ State_____

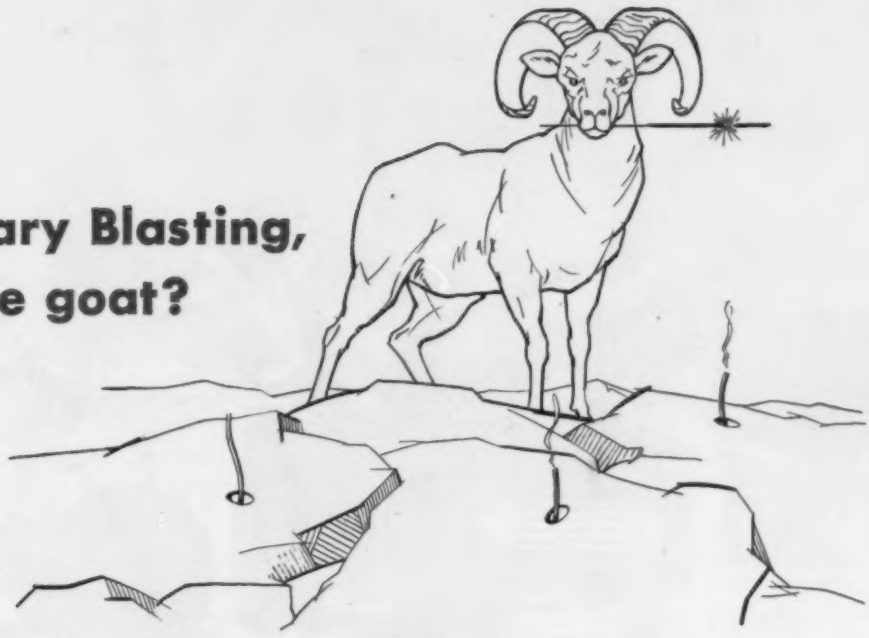
FIRST CLASS
PERMIT No. 44
CHICAGO, ILL.

BUSINESS REPLY CARD
No Postage Stamp Necessary if mailed in the United States

THREE CENTS POSTAGE WILL BE PAID BY

Pit and Quarry Publications
431 South Dearborn Street
CHICAGO 5, ILL., U.S.A.

In Secondary Blasting, why be the goat?



. . . when you can play-it-safe with Quarrycord

You play-it-safe three ways when you use safety fuse and Quarrycord in your secondary blasting:

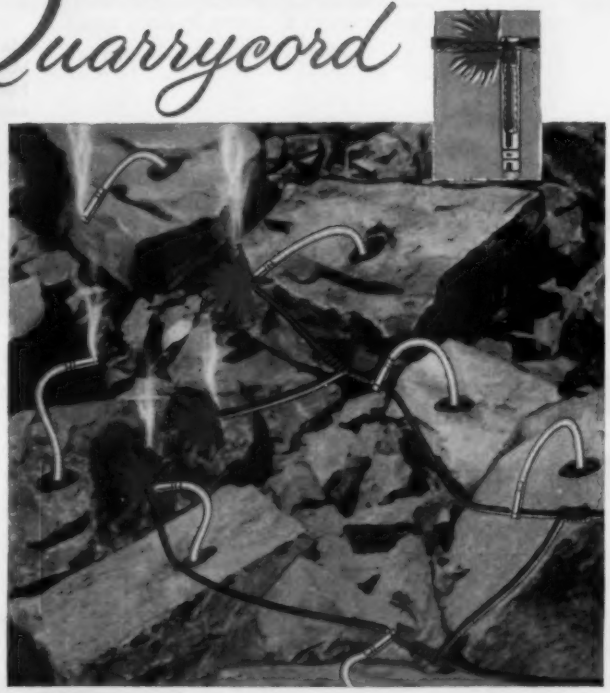
1. You can ignite each and every fuse *from one remote point* and eliminate the hazard of men climbing over the rock pile.
2. You gain the advantage of *fuse* blasting — "pop-pop-pop" instead of "boom!"
3. You fire when ready, without danger from stray electrical currents from equipment or thundershowers.

Quarrycord looks like colored twine. It is soft, pliable — easily lighted with a match and burns with an open flame at the rate of about one foot per second.

It's easy to use. Cut your safety fuse in equal lengths. On the end of the fuse opposite the cap place a Quarrycord Connector. This is a copper tube containing an ignition compound. The end is slotted to hold the Quarrycord securely.

After loading the holes, connect each fuse with Quarrycord, and make cross connections wherever a short cut will get the flame to the fuse in less time.

Run the end of the Quarrycord to a place where it can be lighted easily — light it with a match and go to a place of safety.



This folder tells the whole story: what Quarrycord is, how to use it and what it can mean to you in greater safety and lower costs in secondary blasting. We have a copy waiting for you — it's free.

For more information see your explosives supplier or write to

Q-1

THE ENSIGN-BICKFORD COMPANY

Simsbury, Connecticut • Since 1836

Primacord® Detonating Fuse, Safety Fuse, Ignitacord®, Quarrycord, Pyrotechnical Devices and Blasting Accessories

Big production: at the Camp Dennison, Ohio, plant, a 2¾-yd. Michigan loads out a heaping bucket load of frozen aggregate Power-shift transmission is standard equipment—cuts seconds off every cycle between truck and pile.

$76,000* buys *one* 2¼-yd. truck crane or *four* 2¾-yd. Michigan Tractor Shovels . . .

Here's why this Ohio firm bought the four Michigans

Ohio Gravel Company operates five plants around the perimeter of Cincinnati. Until a short time ago, ½-yd. and ¾-yd. clamshells and shovels handled all loading from stockpiles. When it became apparent that the Miami plant (300 t.p.h. capacity) did not have adequate loading capacity, Ohio Gravel asked for bids on a special 2¼-yd. mobile crane. According to Walter Flach, V. P. Production, they recognized the need for bigger bucket capacity and better mobility between stockpiles. Bids on the crane ran from $65,000 to $76,000—a substantial price to pay for increased capacity in *only one of the five plants.*

Had to leave the demonstrator

At this point Bode-Finn Co., the local Michigan distributor, got permission to demonstrate a 2¾-yd. Michigan Tractor Shovel at the Miami plant. The "demonstration" lasted two weeks—that is, Ralph Hautman (Miami superintendent) wouldn't

*Current list price F.O.B. factory for four 2¾-yd. gasoline Michigan Tractor Shovels.

let them take the demonstrator away until a permanent machine was delivered. Before the new Michigan even arrived, Ohio Gravel Company bought three more for other plants. *The total cost of the four Michigans was approximately the same as the one crane.*

Loads as much as two cranes

At the four plants with Michigans, the superintendents agree that one Michigan loads trucks as fast or faster than two ¾-yd. clamshells. With widely separated stockpiles, the Michigans move around the yards as fast as the incoming trucks—24 mph top speed. They consistently get heaping bucket-loads. Power-shifted cycles between pile and truck average about 40 seconds; it takes 4 minutes or 6 bucket-loads to put 19 tons into a dump trailer (see picture).

Handling clean-up work in its spare time, the Michigan eliminates stockpile contamination. Unlike the clamshells which formerly handled the job, the Michigan does not pick up dirt as it cleans up around the piles.

More profits for producer and trucker

Faster travel, faster cycles, bigger bucket-loads obviously make more profits for producer and trucker alike. Ohio Gravel Company recognized this fact when the first Michigan was demonstrated. Your own Michigan distributor will give you this same kind of proof. A chance to demonstrate is all he asks—*you name the job.*

A typical heaping bucket-load of graded bank run comes up well over the 2¾-yd. rated bucket capacity. Digging bank run, the Michigan handles approximately 5½ tons per bucket-load.

Michigan is a registered trade mark of

CLARK® EQUIPMENT

CLARK EQUIPMENT COMPANY
Construction Machinery Division
2479 Pipestone Road
Benton Harbor 18, Michigan

It took four minutes to put 19 tons of material into this dump trailer. Six bucket loads filled it. Note that the **2¾-yd. Michigan** has plenty of dumping clearance over the 10-ft. high side boards. Even with batch boards in place, the Michigan has no trouble.

Edward Balf Co.

(*From page* 150)

hold a total of 2,000 tons of finished grades of aggregates. Three of these bins hold 2¼-in. stone; two, 1¼-in.; two, ¾-in.; two, ½-in.; and one, ⅜-in. aggregate.

The bin-supporting structure is of reinforced concrete, spanning three passageways for trucks taking materials. The screens are set above these bins, and this section of the building has corrugated iron walls and roof, and all conveyor belts are similarly covered. Walkways alongside the entire length of each belt permit inspection and quick repair. The supporting steel framework was designed by Allis-Chalmers and erected by the Eastern Engineering Co., using Balf Company personnel.

The company disposed of over 500,000 tons of aggregates last year, at a time when the normal demand was somewhat lower than usual. It is expected that the 1957 output will be much higher. Materials go mostly to paving contractors and to the company's own paving work. About 20 percent is used in its ready-mixed concrete operations. For the past generation this company was the largest firm in the Hartford area furnishing crushed stone, sand, gravel, concrete, and bituminous materials to contractors, towns, municipalities, and the state of Connecticut.

When the founder of the company, Edward Balf Sr., passed away in 1930, a board of trustees was appointed to manage the company. Three officials served until 1953, when Edward J. Balf, the founder's son, was elected president and treasurer. In line with the overall expansion plans of the company, Howard S. Ives, former Deputy State Highway Commissioner, has recently joined the company as general manager, to take full charge of all company operations. Officers in addition to Mr. Balf include J. B. Bolles, vice-president, and S. M. Schatz, secretary. H. R. Killian is general superintendent, and George D. Pollard is superintendent of the Newington plant.

SPANG

BLAST HOLE BITS

Drill More Holes Per Bit, At Less Cost Per Hole

SPANG CHURN DRILL BITS, famous for long life and economy in the drilling of blast holes for the fragmentation of minerals or overburden, drill *more-holes-per-bit* at *less-cost-per-hole*, because they are fully heat-treated from end to end and have the *extra strength in pin and blade sections* to stand up under the toughest drilling conditions. They are made with semi-dressed ends for quicker, easier finish-dressing, in High Carbon, A.I.S.I. 4340, and Spang Molloy Steel.

Available also, as an added economy, are SPANG REPLACEMENT BLADE SECTIONS in the same grades of steel, and uniform forge section, for welding to pin and collar sections of original bits when long service has worn the integral blade to a point where replacement is desirable.

Anyway you look at it, SPANG BITS are your best buy for more holes at less cost per hole.

SPANG REAMER TYPE PILOT BITS FOR DRILLING LARGE DIAMETER HOLES

Can be supplied in all sizes and in any practical weight.

For information on SPANG BITS, and FREE CATALOG of Complete Line of SPANG Cable System Drilling and Fishing Tools, consult your nearest Dealer, or write direct to:

SPANG & COMPANY

DEPT. M-3 BUTLER, PENNSYLVANIA

The HIGHER STANDARD

For over 60 years Manufacturers of Spang Weldless Jars and a Complete Line of Cable System Drilling and Fishing Tools for Oil and Gas Wells, Water Wells, Prospect Drilling and Shot Blast Holes.

Soil-Cement Yardage Total Shows 15% Increase in 1956

Soil-cement awarded during 1956 totaled 25,100,000 sq. yd., according to reports compiled by the Portland Cement Association. This represents an increase of 15 percent over yardage awarded during the previous year (1955).

Soil-cement street construction showed the largest increase with more than 7,000,000 sq. yd. awarded, a gain of 34 percent over 1955.

In terms of mileage, yardage awarded during 1956 would equal nearly 2,100 miles of 20-ft. wide pavement.

Consolidated Cement Corp. Reports 50% Gain in Income

Consolidated Cement Corporation had net earnings of $1,836,645 after taxes in the fiscal year ended December 31, 1956, a gain of 50 percent over income of $1,217,518 the year before, according to Smith W. Story, president.

Earnings amounted to $2.19 a share based on 837,500 shares of common stock outstanding, against $1.45 in 1955 on the same number of outstanding shares.

Net sales were $10,199,590 and $6,925,677, respectively; and income before taxes was $3,386,645 in the latest period, compared with $2,167,518 the year before.

Consolidated Cement has an annual productive capacity of 4,750,000 bbl. of cement and operates plants at Cement City, Mich.; Paulding, Ohio; and Fredonia, Kans.

A frequently-seen Michigan Tractor Dozer application: push-loading scrapers. Owner: Dalon Contracting Co., Atlanta.

Be sure to check before you buy

which dozer gives you the most

SPEED . . . Michigan Model 180 Tractor Dozer has a top of 30 mph forward, 30 mph reverse.

TRACTION . . . of all rubber-tire dozers, only Michigan has full traction when turning. You *steer* around turns, don't wear out tires by dragging or braking inside wheels.

TRACTION IN SOFT GOING . . . of all rubber-tire dozers, only Michigan has a front-axle no-spin differential. Wheel on poorer footing automatically slows down; power goes to other wheel.

EFFICIENT POWER FLOW . . . of all tractors, only Michigan has a power train completely designed and built by one manufacturer (Clark). This power train design has been so effective it has been used without any basic change in the over 6,000 Michigan Tractor Shovels and Dozers now in the field.

EASY OPERATION . . . to change speed or direction of a Michigan, simply flick small steering-post lever. No time or momentum lost for clutching. New operators easy to train.

VERSATILE BLADE . . . from seat, operator can pivot blade through 35 degree arc *under pressure* to uproot stumps, dig or float.

MECHANICAL EFFICIENCY . . . all Michigans have planetary wheel axles which reduce axle strains 70% . . . 3-to-1 torque converters which eliminate shock loads . . . power-shift transmissions . . . simple job-proved hydraulic controls . . . thus stay on the job and out of your shop. *Ask any Michigan owner to compare its mechanical efficiency record with other tractors he has now, or has had.* Particularly compare it with other big rubber-tire tractors.

LOWEST PRICE . . . fully-equipped Michigan Tractor Dozer costs about $6,500 less than other big rubber-tire dozers. Power-shift transmission, torque converter, planetary wheel axles, down-pressure blade, swinging drawbar all standard . . . to get top efficiency you need no "extras". Wide variety of purchase plans . . . including no-money-down, pay-as-you-profit lease-purchase.

Ask us for details before you buy *any* dozer. Rubber or tracks, we welcome your test and comparison.

Michigan is a registered trade-mark of

CLARK EQUIPMENT COMPANY
Construction Machinery Division
2479 Pipestone Road
Benton Harbor 17, Michigan

CLARK® EQUIPMENT

N.A.L.I. Meeting

(*From page* 128)

Agriculture underwent somewhat trying times during its recent organizational development. Due to the fact that the division was created with the signing of Public Law 540 on May 28 last year, Mr. Doggett pointed out that the organization had to be staffed, and a field program had to be developed in the middle of a growing season—a situation which left much to be desired.

With respect to the conservation reserve part of the program, the speaker commented that this is an untried field, and that the aglime industry can be of substantial help in making it successful. The problem is to develop a formula for taking those lands out of production which appear to be most in need of conservation practices, and which, while being uneconomic at present, are currently contributing to the overall surplus production problem.

On the matter of acreage reserve, Mr. Doggett stated his hope that aglime producers will furnish assistance to farmers in getting the program under way. He pointed out that this should help the production adjustment problem in that a good cover crop will be conducive to keeping acreage reserve land out of production, or at least out of production of those crops presently creating surplus problems.

H. L. Manwaring, representing the Commodity Stabilization Service, prefaced his discussion by likening the various phases of conservation, as discussed by the preceding speakers, to the various parts of a fine automobile. While a car is a beautiful piece of machinery, Mr. Manwaring stated, it will go nowhere until someone gets in, starts it, and guides it. The last step in this analogy, it was suggested, is taken by the ASCS committeemen who put the program to work in the field.

The primary purpose of Congress in establishing the committee system, as Mr. Manwaring sees it, was to put the administration of the programs as close to the farmer as possible, in order to take cognizance of varying local conditions.

The objective of the national office, Mr. Manwaring pointed out, is to assist the committeemen in attaining equality in distribution of public funds, so that every farmer has an opportunity to meet required conditions on his farm.

It was further noted that a happy medium must be achieved between the two pure extremes of conservation and production. Program efforts are based on a "sliding scale" that will allow local people to meet local conditions most effectively.

A lively question-and-answer period followed the remarks made by the U.S.D.A. men, and several pertinent queries and comments were made from the floor. Among the points made was the fact that while soil testing is regarded as essential, in the experience of most producers it has been found that farmer participation in cost-share liming dropped sharply with the introduction of a mandatory test. Delay in obtaining test results due to administrative bottlenecks is considered the root of the difficulty.

On this point Mr. Koger noted that at the national level soil tests are encouraged, but that the individual states should have the responsibility of recommending soil testing requirements. Further, it was said, the national regulations provide for such modification at the state level.

Another point brought up on the floor concerning causes for less farmer participation in cost-share liming is the lowered payment rate. This is perhaps the most important single factor. While there is now authorization for increasing payment rates from 50 up to 80 percent, it was suggested that the mechanics of getting approval at state and county levels has proved a deterrent.

Mr. Koger, and a member of his staff, Mr. Crumpler, noted in reply that there are three methods of setting cost rates indicated in the National Bulletin. Further, with respect to that category of practices in which an increased rate is permissible, a request for such must originate in the county needing it. The request is then referred for consideration to the state committee, and the latter may recommend to the ACP administrator that it be approved. In the event that other counties in a given state have comparable justification, the states have been given authority to increase rates of payment to those counties on the basis of the original justification (approved) for the first county requesting an increase.

Another point raised in the floor discussion concerned the use of purchase orders. It was pointed out that without the use of these orders, the farmers — whose cash situation might not be favorable—are required to pay for lime in total as received, and then wait for a refund on the cost-share. It was felt that increased use of purchase orders would show an accompanying gain in farmer participation.

In reply to Mr. Koger's query as to why purchase orders are not used more widely in view of the encouragement of their use from officials on the national level, floor comments indicated that apparently county office personnel are reluctant to undertake the paper work involved. Mr. Manwaring pointed out that county office or field men have no prerogative other than to expedite the issuing of purchase orders if state committees have approved their use.

On another matter, Mr. Koch noted for the panel members that this group had recommended restoration of administrator funds, so as to enable community committeemen to make direct calls on farmers, as had been done some years previously. In answer, it was pointed out that a substantial increase in such funds would have to be approved by Congress before the several thousand committeemen could be called in for briefing on all phases of the programs, and then be returned to the field to make individual contacts.

Panel on Promotion

Co-chairmen for the session devoted to discussing promotional activities among the producers were R. B. McNab (American Limestone Co.) and Lynn N. Stewart, Columbus, Ind. The four-member panel included: W. Dean Fyock (Fry Coal & Stone Co.), Lowell E. Glendening (Mulzer Brothers), Robert N. Stewart, Columbus, Ind., and William E. Stone (Piqua Quarries, Armco Steel Corp.).

Mr. Fyock led off the discussion with comments on the effort his company expends in promotion work. Particular reference was made to work in connection with vocational agriculture groups, and to a "package" deal for farmers. He explained that future success in aglime promotion is dependent to a large extent on educating the future farmers (now students) in the benefits of liming. To this end, Mr. Fyock stated, several projects have been undertaken. These include the establishment of co-operative experimental plots with the F.F.A. boys, providing lime and other fertilizers for these plots, and offering prizes in land judging contests.

With respect to the package deal, Mr. Fyock indicated that this is based on the effort to sell the farmer everything he needs for fertilizing and taking care of his crops, including aglime, fertilizer, and agricultural chemicals.

(*Continued on page* 198)

"Here's why we prefer International Drott in the pits..."

"Plenty of room and comfort," says operator Lawrence Rutherford for Hoosier Lime and Stone Co., Salem, Indiana. "This TD-9 is faster, easier to operate and vision is much better." He commands full 41° *ground-level* bucket roll-back to heap the bucket, every time. Semi-skid method gives him fast load transport on exclusive skid-shoes. Exclusive level raise action all the way up helps "keep the heap" till he dumps.

"A powerful, smooth-operating loader," declares owner-operator L. D. Lynch of Grand Blanc, Mich. "Hydro-Spring really makes a difference in operator comfort and machine protection." Exclusive Hydro-Spring is a hydraulic cylinder connected to the main lift system enclosed in a heavy-duty locomotive-type coil spring—to swallow slam-bang shocks—protect equipment and hydraulic hoses.

"My experience with seven International crawlers has been mighty good all the way," says owner-operator Paul Bryson of Hazelwood, N. C. "My old TD-9 has 10,000 hours on the meter." Such performance is behind his recent purchase of a new bonus-powered TD-9 Skid-Shovel®. He gets the original pry-action break-out force with triple the digging power of ordinary front-end loaders!

Prove International Drott performance for yourself. Find out why it's the favorite of the man in the seat. Ask your International Drott Distributor for a demonstration, today. He'll show you all the many exclusive Four-In-One or Skid-Shovel profit pay-off features!

International Harvester Company, Chicago 1, Illinois
Drott Manufacturing Corp., Milwaukee 15, Wisconsin

INTERNATIONAL® DROTT®

"Not what we say, but...

WHAT OPERATORS SAY ABOUT SECO SCREENS..."

Wm. Spiegel & Son

BIRD RIVER RD. BALTIMORE 29, MD.

Screen Equipment Company, Inc.
1754 Walden Avenue
Buffalo 25, New York

Dear Sirs:

Thank you for your inquiry of May 21st, in reference to our 3' x 8' SECO screen.

We put the screen in operation on Sept. 6, and as of this date we have screened approximately 20,000 tons of sand. From the first moment that we saw it, there was no doubt in our mind that this screen would do the job for us.

After we saw it in operation, we were more than pleased and amazed how smooth and quiet it ran. We have learned a lot about vibrating screens in the few years we have been screening sand and your screen has everything a vibrating screen should have. Our operation here is not too large, therefore, we wanted a screen that would be small, light, the price right but still would do the job. Your screen fits those specifications to a "T." During winter months we use ¼" opening wire cloth and during summer months we use ¼" opening wire cloth on top, 3/16" on bottom. We have always screened 30 tons or over per hr. sand being wet or dry.

I guess I will never stop praising this screen and thanking myself for deciding to get one. As I told your representative from Philadelphia, the only thing wrong with the screen is the fact that we didn't have it five years sooner.

Sincerely,
Wm. Spiegel & Son

Norman J. Spiegel

Norman J. Spiegel

SEND FOR CATALOG 204

This fully illustrated, informative catalog describes the Seco Vibrating Screen line, and will help you determine the right screen for your particular job.

SECO

TRUE CIRCULAR ACTION

VIBRATING SCREENS

SCREEN EQUIPMENT COMPANY, INC.

BUFFALO 25, N. Y.

High Tonnage and Smooth Performance

CLOSNER EQUIPMENT COMPANY

1415 WEST POPLAR ST. SAN ANTONIO 7, TEXAS

PERSHING 4-4269

Screen Equipment Co., Inc.
1750 Walden Avenue
Buffalo 25, New York

October 5, 1956

Attention Mr. N. J. Gleiser

Subject: Collins Construction Company of Texas

Dear Nels:

Since receiving your letter of August 31, 1956, regarding this customer, we have obtained additional information concerning material handled with their 5'x10' double-deck, Type "H" screen.

About a week ago, they reported that in one day a total of 4,600 cubic yards of material was put through the plant in approximately 9½ hours running time. This, of course, checks out at 494 yards per hour, and with a cubic foot weight of 85 pounds we come up with 568 tons per hour.

As you probably will recall, all material put through the plant goes over the screen. Depending upon pit conditions, the amount of material going through both decks of the screen will vary. However, with production at the above rate, it is estimated by the customer that in the vicinity of 60% of the material passes through the 4" top deck opening and the 1½" bottom deck opening. From my observation, the bulk of this percentage goes through in about the first four feet of the screen decks.

Best regards.

Sincerely yours,
CLOSNER EQUIPMENT COMPANY

George W. Closner

GWC:rp

Long Life Service

BELTON SAND AND GRAVEL CO., Inc.

ELMER H. HAYS — BELTON PHONES

BOX 899
BELTON, TEXAS

Mr. C. S. Fielding
Screen Equipment Co.
1750 Walden Ave.
Buffalo, N. Y.

24 July, 1956

Dear Sir:

We would like very much to have you quote us a price on the following SECO vibrating screen.

A 3' x 8' single deck, Type MS, scalping screen. Screen to have built in frames and arch deck to use crimped edge cloth and draw plates. Frames and draw plates built so as to take two 3' x 4' cloth sections.

We have used a SECO screen for the past ten years and are very well pleased with it.

Thank you for your attention to this matter.

Yours truly,
Belton Sand and Gravel, Inc.

By: L. P. Heard

L. P. Heard, Jr.

Ohio Asphaltic Limestone Co.

NEW VIENNA, OHIO

PHONE HILLSBORO 771
LYNCHBURG 9182

May 12, 1956

Screen Equipment Co.
1750 Walden Ave.
Buffalo, 25, New York
Attn: Mr. C. S. Fielding

Dear Sir:

I wish to thank you, Mr. Fielding, for your interest and help. I believe yours is the best Company we have ever had dealings with in so far as the service you give to your customers and the interest you show in their problems. Could you give us a tentative shipping date on the new panels.

Yours truly,
Ohio Asphaltic Limestone Co.

W. C. Mason

W. C. Mason
Pres.

WCM/LB

N.A.L.I. Meeting

(*From page* 194)

Mr. Glendening's opening statement described the promotion of aglime as a missionary effort based on three sermons—benefits to be derived, need, and pointers on liming. Outlining his firm's activity, the speaker brought out these steps being taken: a soil testing program; mailings of literature timed to run just prior to the ACP sign-up; public relations work at county and local levels in co-operation with ACP groups; publicity releases; liming demonstrations; and work in 4-H club programs.

Making the significant statement that the low margin of profit in aglime will not allow the staging of any spectaculars, Robert Stewart added that promotion is nevertheless mandatory. He pointed out that his efforts have been based on personal contacts with the farmers. In addition, Mr. Stewart reported, at his firm's quarry the sales are made direct to the farmer in lieu of truckers.

Along with taking an active interest in various farm organizations, the speaker noted, a strong effort is made to be of assistance to individual farmers on such projects as soil testing. In addition, exhibits are set up and staffed at various agricultural fairs, and time is spent with the extension service, SCS, and other agencies at various farm meetings.

Drawing on a background of many years of promotional advertising for aglime, Mr. Stone discussed a number of activities which an Ohio group of which he is a member has engaged in in the past and is pursuing currently. With respect to the latter, he reported particularly on a series of ads run in a farm magazine; donation of scholarships to Ohio State University for deserving students; distribution of aglime news releases to vocational agriculture teachers, county agents, and ACS officers; and establishing close working relations with truckers.

The final address of the session on promotion was delivered by B. T. Abbott, head of Southern States Soil Service, Memphis, Tenn. Among the important points brought out by Mr. Abbott with respect to the use of aglime is the fact that the time element is a critical factor in the revival of depleted soils. He emphasized the point that soil which has been abused or neglected over a long period cannot be rebuilt overnight. Citing cases in his own experience, the speaker noted that as much as ten years had elapsed following the first liming until acreage yield was appreciably increased.

On the matter of overliming, Mr. Abbott indicated that this is an area to which considerable research must be devoted before any categorical conclusions can be drawn. He added that studies must be made and complete yield records must be kept on specific test areas for this determination.

While the benefits of liming have long been established, Mr. Abbott admitted, the use of lime in sufficient amounts to meet national needs would take more funds than are now available. In view of this fact, it was suggested that producers and others concerned with the situation take steps to acquaint and educate local bankers with the problem. Mr. Abbott noted that in areas with which he is familiar some bankers who have learned of this need have set up aglime loan programs for farmers.

In the area of promotion and advertising, the speaker suggested that a better psychology would be found in presenting aglime as the best material available, and not merely as the cheapest.

Referring to a survey conducted in southern areas by his organization, Mr. Abbott reported that while the study indicated that soil tests were used as the basis for liming, only 5 percent of the soils needing an application received it.

As a forceful demonstration of the benefits of liming, the speaker suggested that two test areas be established side by side—one having been treated with lime as well as other needed elements, and the other with lime eliminated. The results, it was implied, would be striking.

OPERATING SESSION

The afternoon session of the first day was presided over by Thomas B. Stafford (Vermarco Lime Co., Proctor, Vt.), and was devoted to a panel discussion of particular operating phases. In addition to Mr. Stafford, this group included Charles Rich (Swanton Lime Works, Inc., Swanton, Vt.), William J. Clark (Munnsville Limestone Corp., Munnsville, N. Y.), Arthur R. Alvis (Alvis Limestone & Concrete Co., Butler, Mo.), and John M. Deely Sr. (Lee Lime Corp., Lee, Mass.).

Drilling The operations of a self-propelled, air-powered drill were described by Mr. Rich, who stated that such a unit was currently being used for blasthole drilling in his quarry, with all phases of its operation being closely studied.

Among the factors leading to replacement of an older, wagon-type drill, said Mr. Rich, are the desire for more footage per hour, a saving in drill-steel costs, and labor saving. With respect to the first, Mr. Rich noted that the new unit has surpassed the older in achieving an average of 30 f.p.h. (The drill mounts a 4½-in. bit). A saving in steel cost has already been realized; and while operation is still in a somewhat experimental stage at this particular quarry, a saving in labor is also anticipated in view of the drill's mobility and ease of handling. The 10-ft. lengths of steel used are reportedly easy to change.

At present an 8- by 8-ft. drilling pattern is followed, with holes put down to 64 ft., Mr. Rich stated; but experiments with the powder factor are still in progress. It was pointed out that broken-off bits have been recovered with ease by means of a magnet. Present experience has shown, the speaker said, that caution must be exercised with respect to dull bits and high rates of feed, which are factors in early steel fatigue.

Dust Control As pointed out by Mr. Clark, his firm's desire to eliminate the dust hazard and nuisance from plant operations was mirrored by the attitude of the labor department of the state in which the company operates. After checking with other producers and visiting other plants, company officials decided to install a wetting device for dust control, Mr. Clark said.

The system installed incorporates a 16-gal. tank for the wetting agent, piping to various control points, and nozzles. Spray joints are at the mouth of the primary crusher and at various conveyor discharge areas. Varying sizes of nozzles are used above conveyors of different widths.

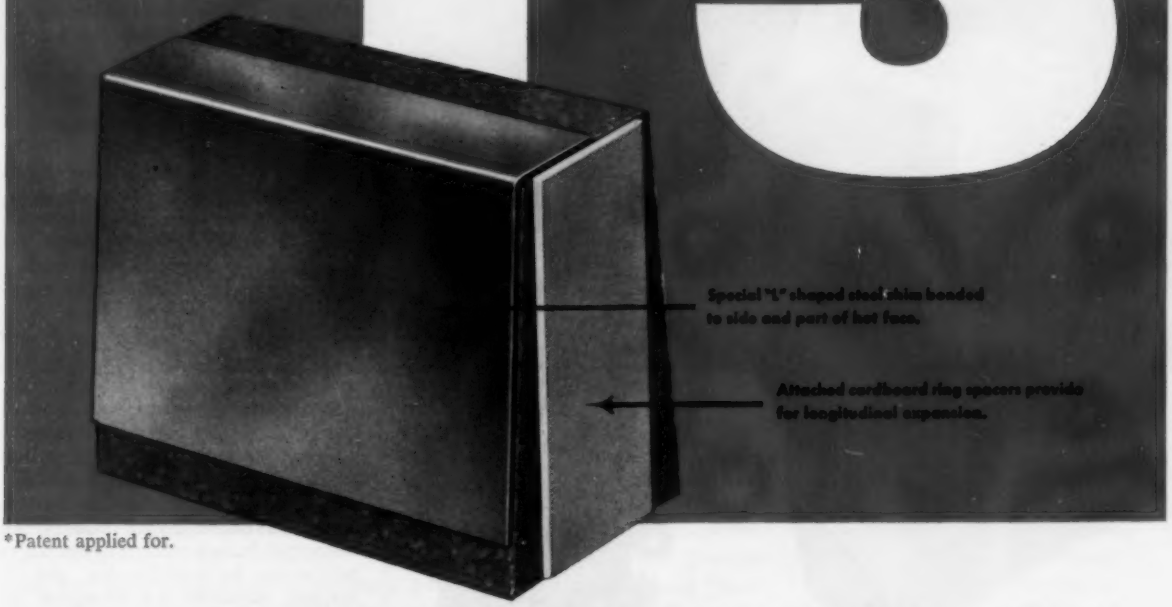
Load switch solenoids were installed for the purpose of turning off spray above empty belts, and although the lines carrying the wetting compound (under pressure) are heated in cold weather, it was stated that the compound can be used without heating. The installation has proven quite satisfactory, according to Mr. Clark.

Preventive Maintenance Acting as moderator for floor discussion on various preventive maintenance procedures, Mr. Alvis invited comments and suggestions from the producers.

One operator stated that his equipment is subjected to regular checking

New Kaiser Unitized Kiln Liner*

T3


Special "L" shaped steel shim bonded to side and part of hot face.
Attached cardboard ring spacers provide for longitudinal expansion.

*Patent applied for.

Saves up to Half the Production Usually Lost in Kiln Down-Time!

Now you can eliminate the costly process of inserting steel plates and cardboard spacers between bricks while lining your cement kiln—*and let the time saved earn profits in extra production.* Already operators have reported 30 to 50% savings in installation time!

The unique Kaiser Chemicals development that makes this possible is the bonding of accessories to Kaiser Periclase-Chrome Brick. And in addition to increasing production by drastically decreasing installation time, you get these extra benefits:

•Assures Correct Installation—When installing Kaiser T3 Unitized Kiln Liners, shims are automatically aligned between all bricks. And because part of the shim overlaps the hot face, it is easy to see by visual inspection that all bricks are placed correctly, hot face inside.

•Takes the Guesswork Out of Expansion Allowances—The thickness of the adhesive that bonds the steel shims to the brick automatically provides the correct allowance for circumferential expansion. The bonded cardboard spacers give added protection by assuring correct provision for longitudinal expansion. No additional spacers are needed.

•Coats Faster—When the kiln is fired up the overlapping part of the shim melts, oxidizes, and combines with the feed to speed formation of hot zone coating.

•Reduces Inventory Problems—Because the shims and cardboard spacers are bonded to the brick *at the factory,* you need no separate orders or stock records for them. And, in turn, your materials handling costs are reduced.

Let us show you how this new Kaiser Chemicals development can help you reduce kiln down-time *and* give you longer liner life. Contact your Kaiser Chemicals sales engineer now.

Kaiser Unitized Kiln Liners are available in all sizes of the standard 9" x 6" x 3½" Series Arch Brick and Wedge Brick. Write or call for descriptive folder.

Kaiser Chemicals

Pioneers in Modern Basic Refractories

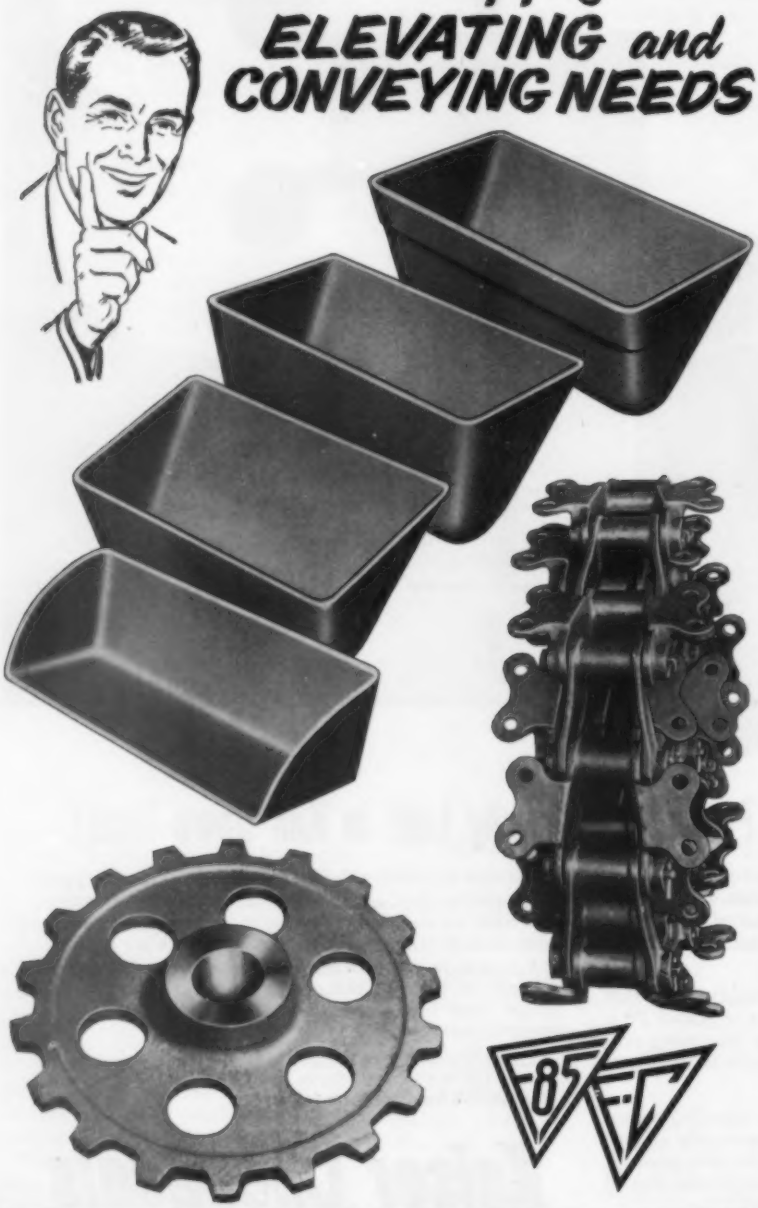
Refractory Brick & Ramming Materials • Castables & Mortars • Magnesite • Periclase • Deadburned Dolomite

To get more information call our nearest Sales Office: Kaiser Chemicals Division, 1924 Broadway, OAKLAND 12, California . . . 3 Gateway Center, PITTSBURGH 22, Pa. . . . 518 Calumet Bldg., HAMMOND, Indiana.

To obtain free copies of Kaiser Chemicals Product literature write Kaiser Chemicals Division, Kaiser Aluminum & Chemical Sales, Inc., 1924 Broadway, OAKLAND 12, Calif., Dept. C 72x32.

See "THE KAISER ALUMINUM HOUR." Alternate Tuesdays, NBC Network. Consult your local TV listing.

FARRELL-CHEEK
"One Source Supply" for
ELEVATING and CONVEYING NEEDS



FARRELL-CHEEK STEEL CO.

HIGHEST QUALITY ELECTRIC FURNACE CARBON AND ALLOY STEEL CASTINGS

FARRELL'S CARBON STEEL CASTINGS	**RAILROAD CASTINGS** Locomotive and Car R. R. Specialty Castings	**GEARS AND PINIONS** "True Tooth" Gears and Pinions, Sheaves and Wheels.	**STOKER PARTS** Feed Screws, Furnace Tools, Flanged Pipe, etc.
F-C HARD EDGE STEEL CASTINGS	**ELEVATOR, CONVEYOR PARTS** Sprockets, Traction Wheels, Chains, Buckets, Rollers, Idlers, Bushings.	**CRANE WHEELS** Overhead, Gantry, Monorail, Ingot Car, Charging Machine.	**HEAVY HARDWARE** Complete Line Wire Rope Fittings and Cutters, Bar Benders and Cutters.
F85 STEEL CASTINGS			

YOUR INQUIRY WILL PROMPTLY BRING DETAILED INFORMATION PERTAINING TO ANY OF THE ABOVE FARRELL-CHEEK PRODUCTS

SANDUSKY, OHIO

and overhauling despite the fact that it may appear to be in top shape. It was emphasized that this practice is definitely very economical in the long run. Along the same line, another member stated that a filing and check system has been set up by his organization to assure regular checking and lubrication of equipment.

The human element came in for consideration too. One operator reported that a safety bonus program set up in his organization paid off in maintenance efforts, due to the extra care the men take of the equipment they are operating.

Blasting A report on the recent developments in the approach to blasting damage investigations was presented by Mr. Deely. As a result of a co-operative study made by several national organizations, including representatives from N.A.L.I., a book titled *Guide for Adjusters* has been printed and is currently being distributed to insurance groups and others throughout the country who are concerned with this problem.

Publication of this book, Mr. Deely said, is a big step toward bringing the problem widespread attention. Since the *Guide* goes into detail on types of blasting damage, structural damage due to factors other than blasting, etc., industry and insurance firms are furnished a wider perspective for investigation, and insurance adjusters are educated on several technical points with which they were generally unacquainted in the past. It is expected that the *Guide* will prove a substantial aid in the diminution of subrogation problems.

Underground Storage As the final speaker of the operating session, Russell Hunt presented a resume of his experience in converting an abandoned limestone mine into an underground warehouse. As he has pointed out in the past, Mr. Hunt stated that the industry can be of great aid to the nation's welfare by providing underground storage areas for materials critical to the economy and defense.

The government, it was said, is trying to alert private industry to the need of being ready to go underground. Defense officials are particularly concerned with the problem, and are carrying out an extensive study. Noting also that the rental return from improved areas is attractive, Mr. Hunt emphasized the contribution the industry could make

"Plenty of power... easy-handling... fast-dumping"...

so quarry orders 3 more Payhauler® units!

H. G. Moore, superintendent, Nello L. Teer Company, Durham, N. C., comes right to the point and tells why their crushed stone company has ordered three more International "65" Payhauler trucks. "Our first '65' has worked 1,050 hours with satisfactory service. It has plenty of power for high-speed delivery, handles easy and dumps fast."

Mr. Moore made this statement and recommended the purchase of the three new "65" Payhauler trucks after measuring the service and production of three other leading haulers working in the quarry. The 1,050 hours gave Mr. Moore and the company sufficient time to test the Payhauler's ample, turbo-charged diesel power plus load-matched gear ratios...a combination which smooths the getaway and permits quick shifting into time-gaining, hill-climbing higher gears! This performance under rough and rugged conditions has made the "65" stand out as a haul unit *long on trouble-free service life... short on travel time...and big on production!*

Prove to yourself what Nello L. Teer proved...that International Payhauler trucks will boost your pit and quarry production and profits...and lower service maintenance costs. Try the Model 65's safe and easy full-load maneuverability. Test the ample power of its 250 hp turbo-charged diesel engine...save up to 10% on fuel. Ask your International Construction Equipment Distributor for a demonstration, soon!

Double-acting hoist cylinder in all stages with *106,300 pounds of force in first stage* permits dumping heaped load of granite into hopper in less than 10 seconds. Hydraulic snubbing action prevents undue stress on hoist cylinders...and gentles body return to frame. Model "65" Payhauler gives you big, profit-boosting 18-ton capacity; Model "95" a husky 24 tons!

INTERNATIONAL® CONSTRUCTION EQUIPMENT

International Harvester Co., 180 N. Michigan Avenue, Chicago 1, Illinois

A COMPLETE POWER PACKAGE INCLUDING: Crawler, Wheel, and Side-Boom Tractors ... Self-Propelled Scrapers and Bottom-Dumps ... Crawler and Rubber-Tired Loaders ... Off-Highway Trucks ... Diesel and Carbureted Engines ... Motor Trucks

an ACCO product

It pays to specify
Tru-Stop Brakes

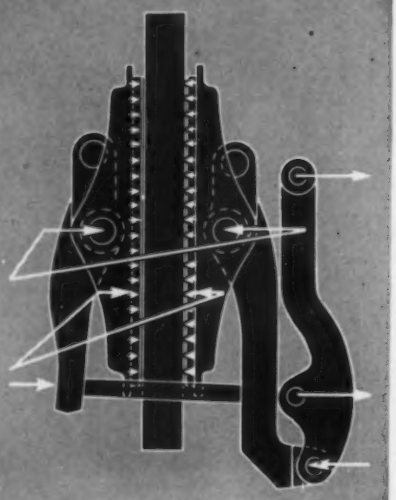
They give you—

Real emergency braking

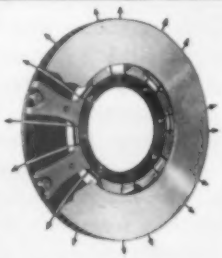
Smooth, positive stops

Safe parking

Lower service costs



TRU-STOPS are real emergency brakes—not just parking brakes. They serve as auxiliary brakes on long down-grades and can bring the vehicle to a smooth, quick stop if service brakes should fail suddenly. TRU-STOPS can do this and more. They can handle the vehicle with safety so that it can be removed from the road.



Air-Cooled

• The terrific heat generated in braking shortens lining life. TRU-STOP design quickly dissipates this heat. Most of the disc is exposed to the air even during braking. And a jet of cooling air circulates between the disc blades and carries off heat.

Smooth, positive stops are assured as the pressure is in direct proportion to the pull on the brake lever. There is no dangerous self-energizing or "over-braking."

TRU-STOPS hold on grades for safe parking. They prevent parking brake accidents.

Lower service costs come from the fact that TRU-STOPS are mounted directly on the drive shaft. Their simplicity of design and accessibility reduce maintenance requirements. Relining or adjustment is a simple job for any mechanic with ordinary tools. It is not necessary to drop the drive shaft.

Specify TRU-STOPS for factory installation on the next vehicle you buy. Send for your copy of this booklet—the complete story of TRU-STOP Brakes.

ACCO

TRADE MARK

Automotive and Aircraft Division
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 2
2216 South Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

by improving present or future underground areas for badly-needed storage.

Social Activities Activities aside from the general sessions included several interesting events. The first of these was the parade following President Eisenhower's inauguration, for which the Washington N.A.L.I. staff arranged to provide reserved seats.

The Manufacturers Division held a guest night on the first evening of the general convention, and provided an enjoyable buffet dinner and dance. Featured at the luncheon on the second day was the widely known speaker and humorist, Ernest Robert Rosse.

The final social gathering was the annual reception and banquet which enjoyed a full house. Several congressional and government leaders were introduced by L. S. Fry, retiring president.

The featured speaker was Senator Karl E. Mundt, S. D. A firm believer in conservation and a member of the Senate committees on appropriations and agriculture and forestry, Senator Mundt was highly qualified to present his discussion on conservation, which he entitled *Saving Nature—Serves Humanity.* He made a strong plea for a united effort toward conserving our resources and soils for the benefit of future generations of Americans.

Officials of Gypsum, Lime and Alabastine of Canada reported net profit for 1956 of $2,058,611, as compared with $2,263,079 in the previous year.

Philip Gross, president, said that sales were the highest on record, but that rising labor and material costs, as well as a decline in export business, contributed to a drop in earnings.

North American Cyanamid Ltd., Niagara Falls, Ont., announced an expansion program for its Beachville quarry. The program involves the modernization and expansion of quarry facilities and the erection of a new rotary lime kiln at Beachville.

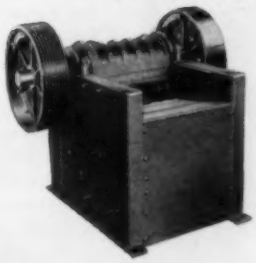
GERALD C. CONDON, comptroller of Janesville Sand & Gravel Co., Janesville, Wis., has been elected secretary-treasurer and a director of the company at a recent meeting of the firm's board of directors. Mr. Condon succeeeds G. F. Ehrlinger, who held the post for 47 years until his recent death.

For men who like to underbid their competitors

(and make a nice profit, too!)

JAW CRUSHERS

PIONEER overhead eccentric action offers double action crushing stroke, thus providing forced feed and greater capacity. Shaft bearings placed closer than on any other crusher. Double-walled, welded steel base reduces weight at the same time it increases strength. Reversible jaw plates. Crusher can be adjusted while in operation. Available in 12 sizes from 1016 to 4248.

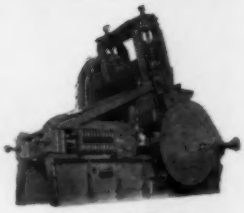


TWIN ROLL CRUSHER

PIONEER design makes 100% of roll shell available as crushing surface. Shells are easily replaced without removing bearings from shaft. Driven by star gears, completely enclosed and running in oil. Available in 2416, 3018, 3024, 4022, and 5424 sizes.

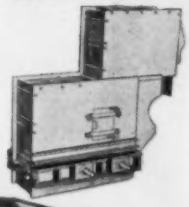
TRIPLE ROLL CRUSHER

Add a third roll and you have a triple roll crusher. This makes it possible to increase stage of reduction to as much as 6½". The Triple Roll Crusher is manufactured only by PIONEER. Available in 3018, 4022, 5424 sizes.



IMPACT BREAKER

The PIONEER 3648 Cuber is a multi-stage, regulated-flow impact breaker suitable for either primary or secondary crushing of relatively non-abrasive stone. Full gradation control. Capacity up to 150 tph of minus 1"; up to 350 tph of minus 3".



APRON FEEDERS

Heavy-duty PIONEER Apron Feeders have ½" thick, overlapping, forged steel pans carried on heavy chains supported on wide heavy duty rollers. Available with or without straight or flared sideboards. Widths 30", 36", 42", 48". Lengths 6', 8', 10', 12', 14' and larger.

PORTABLE APRON FEEDERS

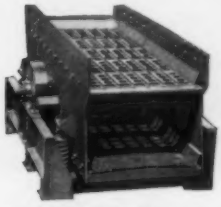
Mounted on pneumatic-tired chassis. Used in place of conveyor for feeding heavy, sharp, abrasive rock to portable primary crushing plant. Easily detached for quick job-to-job moves. Available in two sizes: 36" x 30' and 42" x 30'.

PIONEER ORO FEEDERS

The most rugged feeder made. Pans, rollers, drive sprockets and idlers cast from special high alloyed manganese steel. Pans are from 9/16" to 1" thick, depending on width of feeder. Chain links are cast as part of pan so there are no bolts or rivets to break or loosen. Available in 30", 36", 42", 48", 60", 72", 84" widths.

MECHANICAL FEEDERS

PIONEER Reciprocating Plate Feeders provide uniform flow of material to conveyors. Available in five different models.



MESABI SCREEN

This heavy-duty vibrating screen withstands heaviest loads. Frame is 18" car channel on I-beams reinforced with 8" wide flange beams. Pans are ¾" or ½" thick. Four bearing, heavy duty shaft. Seven sizes from 4' x 10' to 6' x 14'.

VIBRATING SCREENS

PIONEER's full-circle throw gives same positive down-hill vibration at each end as in middle, thus every square inch works for you. Balanced end-for-end and top-for-bottom, to effectively confine vibration to pan. 2 and 3 deck screens in 11 sizes.

BUZZER SCREEN

This small, compact vibrating screen fits on PIONEER Portable Conveyor and is also available with bin mounting. 3' x 6' size for production of ¾" material up to 50 tph; 4' x 8' size for production of ¾" material up to 90 tph.

PIONEER ENGINEERING also manufactures a complete line of portable Crushing, Screening, Washing, and Bituminous Mixing Plants. For further information, mail coupon or see your nearest PIONEER Distributor.

CONVEYORS

Available in 18", 24", 30", 36", and 42" widths. Easy-to-erect *pre-engineered conveyors* range in length from 30' to 120' in 5' increments. *Job-engineered conveyors* for horizontal, extra long, or other special installations are available in any length from 12' up.

PORTABLE CONVEYORS

On hydraulic cradle truck for easy portability and one-man operation. A 70' conveyor is easily raised to operating position in 9 minutes, lowered in 1 minute. Available in 18", 24", 30", 36" widths; in 40', 50', 60', 70' lengths.

Pioneer EQUIPMENT

Pioneer Engineering, 3200 Como Avenue S.E., Minneapolis 14, Minnesota
Division of Poor & Company, Inc. • Chicago

Please send information on equipment checked below.

☐ GRAVEL & ROCK PLANTS	☐ JAW CRUSHERS	☐ ORO FEEDERS
☐ WASHING PLANTS	☐ ROLL CRUSHERS	☐ MECHANICAL FEEDERS
☐ BITUMINOUS PLANTS	☐ IMPACT BREAKERS	☐ VIBRATING SCREENS
☐ BITUMINOUS PAVERS	☐ APRON FEEDERS	☐ CONVEYORS

Name _____

Company _____

Address _____

City _____ *Zone* ____ *State* _____

SCREENS
FOR VIBRATING EQUIPMENT
CLEVELAND Wire Screen Sections maintain rigid accuracy of openings in day-in, day-out shattering actions of high-tonnage vibrating units. Tough, yet ductile, CLEVELAND Wire Screen Sections have fewer breaks, prove greater resistance to abrasion, corrosion, and fatigue.
Designed for all types of mechanical and electrical vibrators CLEVELAND Wire Screen Sections are available in all standard weaves and crimps.
COMPLETE SAMPLE SERVICE
Our Sample Service Department can take the guesswork out of wire selection. An exact sample of the wire gauge, opening dimensions, and weave will be sent to you for approval. Send us your requirements, job applications, and specifications.
Ask For our Bulletin 6, 7, 8 & 10
The CLEVELAND
WIRE CLOTH & MFG. Co.
3576 EAST 79TH STREET • CLEVELAND 5, OHIO

January Construction Housing Drops 30% from 1956

Total January awards of $1,664,000,000 skidded 16 percent below the figure for December, 1956, and fell short of the January weekly contract rate of a year ago, chiefly because of a sharp drop-off in contracts for private construction.

However, there were some bright spots in the January picture. Awards for highways, bridges, earthwork-irrigation-drainage, and industrial building pulled ahead of 1956 figures.

Roadbuilders signed up $266,000,000 in new contracts for highways, 30 percent more than the weekly rate for January, 1956.

Earthwork - irrigation - drainage projects accounted for a total of $124,000,000 in new contracts in January. This was 91 percent better than the December rate.

Awards for construction of public bridges totaled $64,000,000, up 110 percent over December's sluggish pace and 32 percent ahead of the comparable 1956 total.

Industrial building awards topped all categories for the month of January, with a total of $340,000,000.

Among the month's major industrial contract awards were a $35,000,000 steam - electric generating plant for California, a $25,000,000 refinery for Texas; a $20,000,000 chlorine-caustic plant for Louisiana; and a $39,000,000 steam generating plant for Wisconsin.

Despite the continued financing problems facing homebuilders, this type of construction activity accounted for a total of $327,000,000 in January in private mass housing awards. The total was up 4 percent over December.

A part of the current homebuilding total reflects awards for Capehart military housing projects. Although built near government installations (such as Army and Navy bases), these are considered private housing because such projects are privately financed and built.

Labor Developments

(*From page* 79)

April will probably see an increase in the men's clothing industry. May and June will probably see further adjustments in the Bell Telephone system.

Overall, it appears certain that wage rates will rise at least ten cents on the average during 1957. These automatic increases almost make that a certainty, but it is being anticipated that the negotiated raises in 1957, due to rising living costs, will be even greater.

KEEP COSTS DOWN *with help like this . . .*

- TORQUE CONVERTER DRIVE . . . matches power and speed to the job requirements automatically
- 1,000-HOUR LUBRICATION INTERVALS . . . for truck wheels . . . eliminates daily greasing
- ONE-PIECE STEERING CLUTCH AND FINAL DRIVE HOUSING . . . insure perfect alignment, long life
- UNIT CONSTRUCTION . . . makes major service simple, fast
- ALL-STEEL BOX-A MAIN FRAME . . . provides full-strength protection

All pioneered and proved by Allis-Chalmers . . . five of dozens of basic advantages that help hold costs down . . . handle more jobs . . . contribute to a profitable operation. Now is the time to have them working for you. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS *Engineering in Action*

"THE HARDEST, BLOCKIEST ROCK WE EVER ENCOUNTERED", is how foreman described 805,000 cu. yds. of dense mica schist excavated along a 3.8-mile section of Connecticut Turnpike. Up to 30,000 lbs. of explosives were used in a week to shoot 30,000 yds. of rock. Thirteen big compressors, 9 of them Jaeger "600's", supported four 2½ yd. shovels.

How Jaeger "600's" sped Turnpike rock job

Excavating in lifts averaging 15′, Slattery Contracting Co., Inc., Maspeth, N. Y., worked fast to move 805,000 cu. yds. of hard rock on the Connecticut Turnpike. The largest cut, 58′, was taken down in two lifts of 30′ and 28′. Drilling was done in three patterns: 8′x8′, 7½′x7½′ and 6′x6′— a lot of footage. To assure plenty of reserve air for "hurry-up" production, a typical drilling spread teamed two Jaeger "600" Rotaries with three 375 cfm track-mounted drills, providing 400 cfm of 100-lb. air per drill. In other combinations, three Jaeger "600's" powered three and sometimes four 450 cfm track-drills.

Operating at their characteristic slower speed, nine efficient Jaeger "600's" maintained top drilling production for long hours, including double shifts. Full load speed of the Jaeger "600" is only 1650 rpm (100 to 150 rpm slower than other "600" compressors using the same Model 6-71 GM diesel engine), which reduces fuel consumption and engine piston travel and saves up to 9000 compressor revolutions per hour.

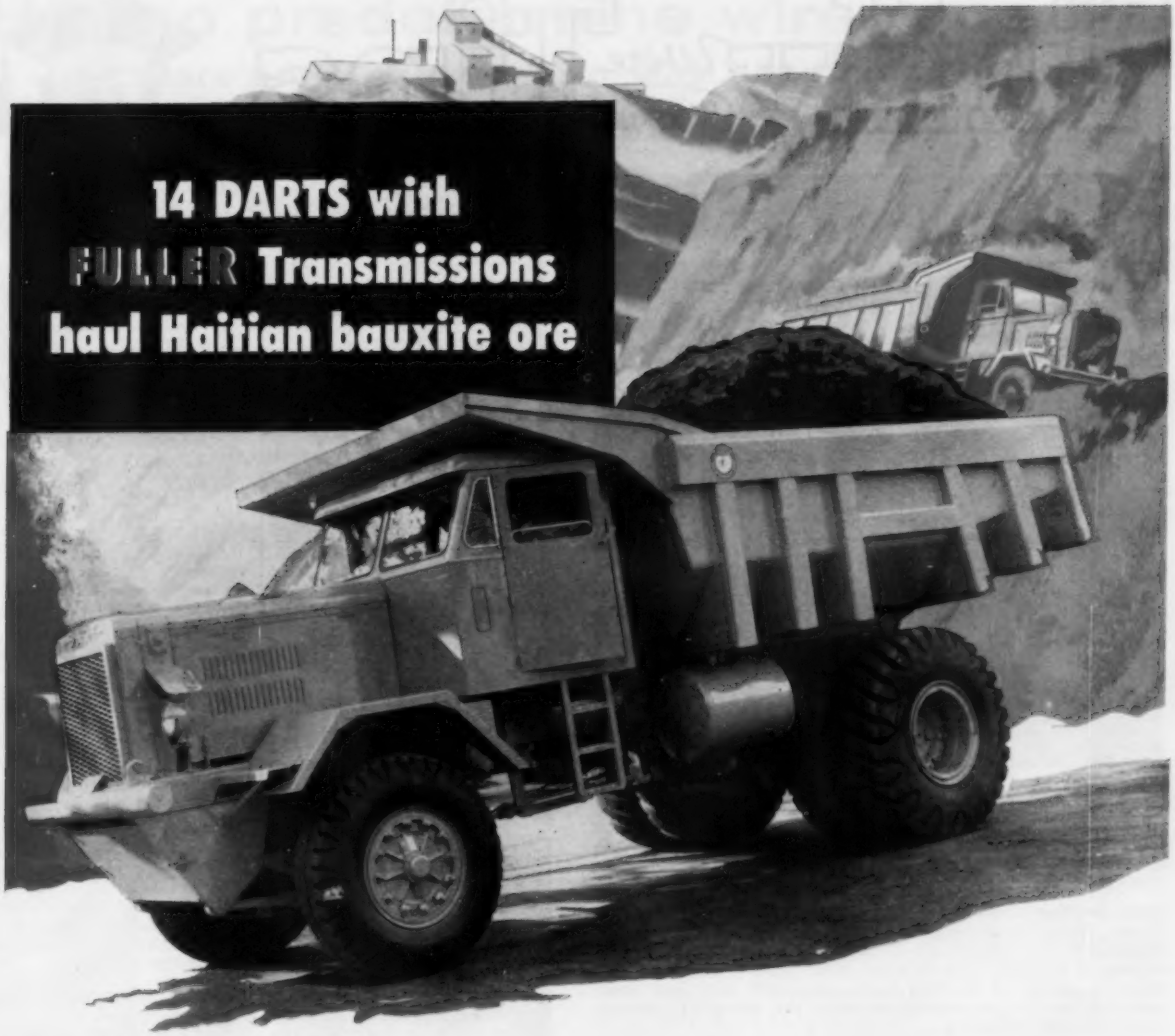
Other Jaeger rotaries (125, 250 and 365 cfm) give you this same slow-speed, high-efficiency performance — 1700 rpm at full load instead of 1800 to 1950. See your Jaeger distributor, or write for Catalog JCR-5.

JAEGER "365" SPEEDS WORK, TOO: Drives 6 Thor #25 heavy duty breakers with full 100-lb. air wallop to finish job in a hurry at a busy Philadelphia traffic intersection. No "old standard 315" compressor has the capacity to do such a fast job. Putting out 50 cfm more air, the Jaeger "365" operates at a fuel-saving, compressor-saving 1700 rpm at full load — 100 rpm slower than any "315" unit.

THE JAEGER MACHINE COMPANY

602 Dublin Avenue, Columbus 16, Ohio

PUMPS • CONCRETE MIXERS • SPREADERS • FINISHERS • TRUCK MIXERS



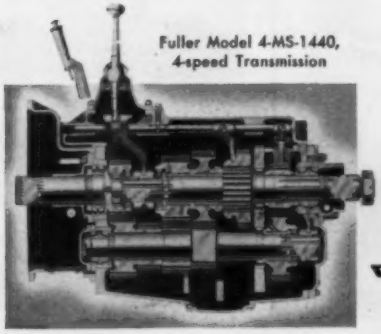
14 DARTS with FULLER Transmissions haul Haitian bauxite ore

Reynolds Haitian Mines, Inc., Miragoane, Haiti, depends upon 14 Dart 25-ton end dump trucks to carry bauxite ore from mines located on a plateau above Miragoane. Trucks are equipped with Twin Disc Torque Converters and 4-speed Fuller 4-MS-1440 Transmissions.

Downgrades vary from 0 to 11% . . . average 5% on the 8 and 11 mile hauls. The short, easy shifts provided by the Fuller Transmission, and the automatic braking feature of the torque converter, permit easy handling of the loaded (97,000 lbs.) trucks. Speeds are held downgrade to 25 mph *without* use of regular service brakes (a Reynolds' stipulation.)

There is a Fuller Transmission designed with *your* job in mind. More than 110 different models are available, for trucks from 100 to 400 hp, engines from 330 to 1440 cubic inches. Check with your truck manufacturer or dealer for the appropriate Fuller Transmission.

One of Reynolds' 14 new Model 25SL 25-ton Dart Trucks. Twin Disc Torque Converters are matched with Fuller 4-MS-1440 Transmissions.



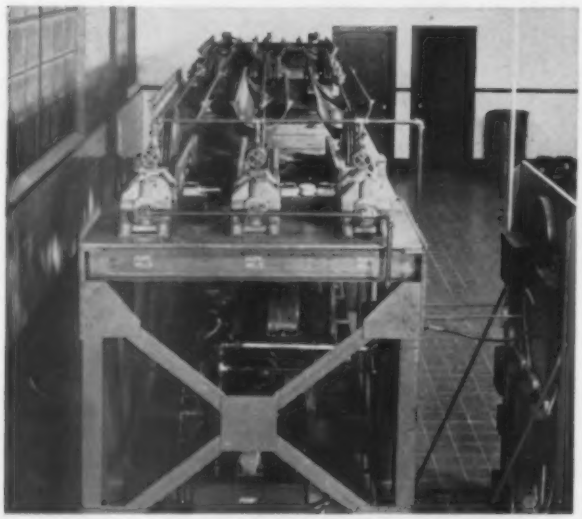
Fuller Model 4-MS-1440, 4-speed Transmission

really
where horsepower goes to work

FULLER MANUFACTURING COMPANY
Transmission Division, Kalamazoo, Michigan

Unit Drop Forge Division, Milwaukee 1, Wisconsin • Shuler Axle Company, Louisville, Kentucky (Subsidiary) • Sales & Service, All Products, Western District Branch, Oakland 6, California and Southwest District Office, Tulsa 3, Oklahoma.

Tuffy Wire Rope Tips



Until recently, a relatively meager amount of factual data has been available for estimating life expectancy of wire rope. Predicting how much service life could be expected from a given wire rope construction under a given set of operating conditions was largely a matter of guess-work, trial-and-error and generally inexact calculations.

Since bending stresses are a major factor in wire rope life, Union Wire Rope engineers designed the Accelerated Fatigue Tester, shown above, with which to pin down the effects of bending on wire rope. Now, from a long and exhaustive series of bending tests, scientific data has been accumulated and organized to take the place of former rule-of-thumb methods.

The data established by this laboratory research is based on the effect of various sheave diameters on bending stresses of various constructions of wire rope.

From test data, bending-life curves have been plotted by Union Wire Rope engineers for each of the more widely used rope constructions. Analysis made on each of these curves showed them to follow a pattern expressed by the curve shown in Fig. 1.

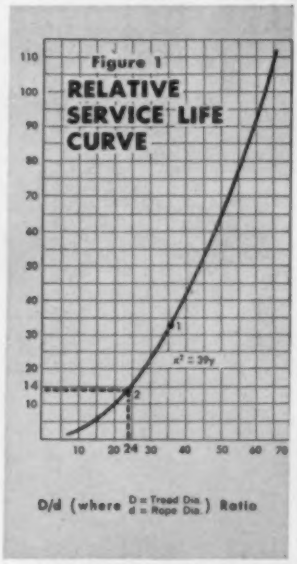


Table 2

BENDING-LIFE FACTORS
When Using Curve of 6x25 FW

CONSTRUCTION	FACTOR
6x7	0.57
18x7	0.67
6x17 Seale	0.73
6x19 Seale	0.80
6x21 Filler Wire	0.92
6x25 Filler Wire	1.00
6x31	1.00
8x19 Seale	1.14
6x37	1.33
8x19 Warrington	1.33
Tiller Rope	2.00

Table 3

SHEAVE DIAMETER FACTORS

ROPE CONSTRUCTION	GENERAL PURPOSE RANGE D/d Ratios		Where D = Tread Dia. d = Rope Dia.
6x7	63		42
18x7	54		36
6x17 Seale	49		33
6x19 Seale	45		30
6x21 Filler Wire	39		26
6x25 Filler Wire	36		24
6x31	33		22
8x19 Seale	31		21
6x37	27		18
8x19 Warrington	27		18
Tiller Rope	18		12

Note on Fig. 1 the curve shows that as the ratio of tread diameter to rope diameter increases (see D/d figures at bottom of chart) the longer the relative service life as expressed by the figures at the left of the chart.

However, there are few pieces of equipment on which sheave and drum sizes can be large enough to afford D/d ratios above 50. From test data the general-purpose range of D/d ratios was determined. Those recommended are set up in Table 3.

Spotted on the curve, for example, is the D/d ratio of 24 at point 1 and D/d ratio of 36 at point 2—these being the range for general purposes taken from Table 3 for the 6x25 filler

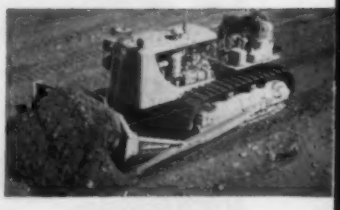
Tuffy Special Wire Ropes are tailored to special use. Ordering is easy:

Tuffy Scraper Rope

Moves more yardage per foot because **Tuffy** Scraper Rope is specially built to take the beating of extreme drum-crushing abuse. Flexible; withstands sharp bending; hugs sheave grooves and winds snugly and smoothly on drums. High resistance to load shock on slack line.

Tuffy Dragline Rope

Longer-wearing line for all dragline operations. Special abrasion resisting construction which also gives extra flexibility. Tuffy Draglines also spool better, ride better on grooves and hold tightly to drums when casting. Consistently dependable in handling any material—wet or dry dirt, sand, gravel, rock, cement or minerals.



How to predetermine wire rope life

Here's the easier, surer way developed by Union Wire Rope Corporation Engineers

rope. Moving from these points to the left on the chart, the relative service life of this rope ranges from 14 to 34 units of any service measure used, such as yards, tons, days, etc.

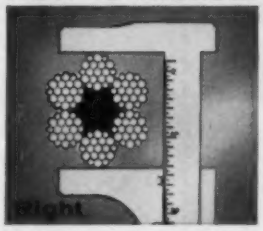
Now to determine the relative service life of say a 6x37. Its bending life factor (see Table 2) is 1.33 as compared to 1.00 for the 6x25 filler wire. Multiply the service life readings of 14 and 25 for the 6x25 filler wire by 1.33, and we find the service life range of the 6x37 falls at 18 and 27 units of service. Relative service life of other ropes are determined in the same way by using the bending factor indicated for each as the multiplier.

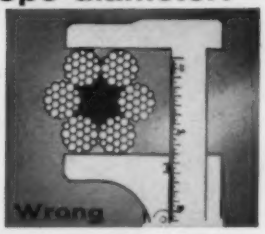
Of course bending is not the only wear factor in wire rope operation, and the general rule—that more flexible ropes should be used as bending stress increases with decrease in diameter of sheave or drum—has to be modified in field use. In fact there are eight other principal operating conditions, in addition to bending stresses, that affect wire rope service life. They are loading conditions, portability, corrosion, abrasion, rope speeds, materials handled, and equipment design.

What Size Rope?

Check groove diameter: When new wire rope is to be used on old equipment, make sure the tread or bearing surface of all sheaves is of sufficient groove diameter to avoid pinching the rope.

How to measure rope diameter:





Use a machinist's caliper. Be sure to measure the widest diameter.

How to measure tread diameter:

Select the smallest sheave or drum to be used with the new wire rope, and measure actual diameter of tread.

Sheaves with grooves corrugated with rope lay impression should be replaced with new ones before installing new wire rope.

New wire ropes are usually over-size. It is advisable to have groove diameters of sheaves or drums as large as the actual calipered diameter of the new rope, or slightly larger. We recommend sizes as follows:

Diameter of Rope	Groove Diameters	
	Minimum	Maximum
½" and smaller	diameter + 1/32"	diameter + 3/32"
9/16-1"	diameter + 1/16"	diameter + 1/8"
1-1/16-2"	diameter + 3/32"	diameter + 3/16"
Over 2"	diameter + 1/8"	diameter + 1/4"

Following the above instructions, you will know the Diameter of Wire Rope to use to fit your equipment.

Just say **Tuffy** give length and size, and forget complicated specifications.

Tuffy Slings and Hoist Lines

Here's a team that cuts hoisting and down-time costs in all types of materials handling.

Tuffy Slings are made of a patented, machine-braided fabric that stays extra flexible, and isn't materially damaged by knotting or kinking.

Tuffy Hoist Line is a special construction with the extra flexibility and toughness for longer service life on overhead, stiff leg and mobile cranes, derricks and clamshells.

Tuffy Dozer Rope

Long after ordinary ropes are worn out, **Tuffy** Dozer Rope has the stamina it takes to keep on handling the blade. 150' reels of 1/2" or 9/16" mounted on your dozers let you cut off worn sections without wasting good rope. This unbeatable combination piles up sizeable savings on dozer rope costs.

Your Tuffy Distributor is ready to help you with any wire rope problem.

If you aren't acquainted with him, look under "Wire Rope" or "Slings" in the classified pages of your telephone directory.

FREE! New "Rope Dope" Educational Bulletins

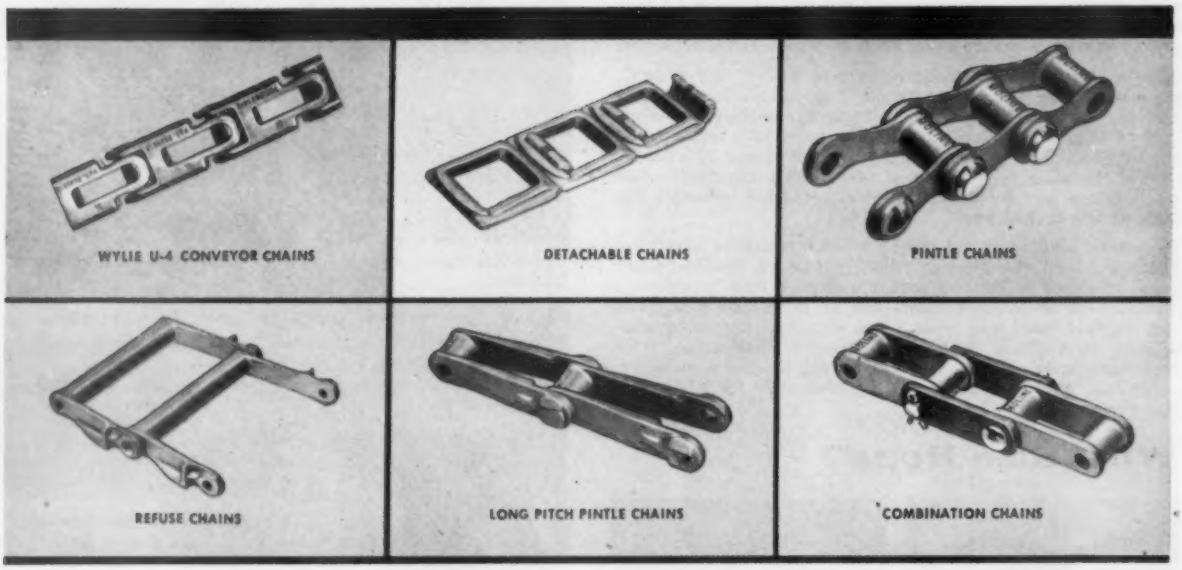
They're packed with boiled-down, useful information on the selection and care of wire rope for greatest service. Just ask your Tuffy Distributor to put your name on his mailing list.

union Wire Rope corp.

2132 Manchester Avenue, Kansas City 26, Mo.

Specialists in high carbon wire, wire rope, braided wire fabric, stress relieved wire and strand

Moline *makes just one thing– the world's finest Malleable chain*



for conveying, elevating and power transmission

SPECIALIZATION makes the difference in Moline Malleable Chain. More than 60 years' concentration on the production of chain makes Moline the chain experts. Moline engineers and technicians confine their efforts to improving chain design and manufacture and to the refinement of production facilities within Moline's two large plants.

That's why you can be absolutely certain that every link bearing the name Moline will give maximum performance and long life... in conveying, elevating and power transmission services.

Specify Moline Chain, malleable or promal, for your equipment. Write today for catalog.

THE HOME OF TRIPLE TESTING!

This completely modern foundry—one of Moline's two large plants—houses fully mechanized production lines and Moline's famous triple testing facilities. Link by link, strand by strand, Moline chains undergo rigid physical testing. They are visually inspected and gauged by experts before being assembled, then stressed to proof strength and shock tested for soundness.

Moline Chains

MOLINE MALLEABLE IRON CO.
ST. CHARLES, ILLINOIS

LEADERS FOR 60 YEARS

Specializing in the manufacture of chain

Moving fast, this 123 hp "550" keeps pit floor clean, blades off loose dirt and rocks. Smooth access saves wear on haulers' tires. Regular clean-up, improved drainage, prevents dirt and refuse from weathering into levels of pit floor.

9 WAYS

to increase pit output and cut cost per ton

You may think of your grader simply as a maintenance tool. But in the hands of a good operator, a versatile, modern high-speed grader actually steps up mine and quarry production, and cuts operating costs. Check these 9 big ways increased grader capacity can boost profits.

1 Regular, more frequent maintenance of haul roads—smooth roads speed hauling, save tire wear, cut hauler down-time, improve safety.

2 Quick clean-up after blast—grader provides a fast, inexpensive way to move scattered fragments back against toe—thus protecting men, machinery, tires and other equipment working around pit, speeding up all pit operations.

3 Clean pit floors—regular routine of maintaining wide, clean traffic-ways that make all areas of pit or quarry quickly accessible, pays off. Equipment can always travel to any assignment by shortest route. Regular clean-up, improved drainage, prevents dirt and refuse from weathering into ore or coal below floor.

4 Maintain good housekeeping around plant—you need ample grader capacity to keep roads, runways, working areas around plant neat, clean, and workable at all times. Grader quickly and efficiently levels or removes the occasional spill left by heaped trucks...from around grizzlies, conveyors, trestles. A clean plant area speeds mobile equipment operation, reduces dust.

5 Keep stockpile toes pushed in—weather and loading operations result in spread of toes around stockpile. This limits working space, wastes stored material. Also, working thinly-spread toes down-grades material, increases loading cost.

6 Keep dumps smoothly spread and level—regular grader service can spread dumped material clear over edge. Offset blade reaches far out beyond wheels. A smooth, level, dry, dump speeds both hauling and dumping, cuts equipment costs. Grader can easily smooth haul road as it travels to and from the dump.

7 Clean ore benches of washed-down dirt—every rain washes dirt into upper benches, lowers quality of mined material. Prompt grader service halts "wash", provides planned drainage, piles washed-in material for easy removal by scraper or truck.

8 Assist exploration teams—a modern grader can build a well-graded and drained roadway in a matter of hours...speeds exploration work by maintaining good roads for hauling men and equipment.

9 Keep drainage open—with just a few hours work per week, a modern grader will keep ditches clean ...provide fast run-off, preventing seepage of dirty water into pit bed. Planned maintenance eliminates erosion of haul roads, keeps trucks and shovels operating on dry footing.

Check capacity of your present graders

It will pay you to re-assess the role and capacity of your present graders. If your machines are more than a few years old, you will probably realize a substantial increase in grader productivity by replacement with modern, fast, powerful, big-capacity graders. Call or write for full information on Adams heavy-duty graders. Six models: 190, 150, 123, 104, 80, and 60 hp. Choice of GM or Cummins engines on 5 larger models.

This 150 hp Adams 660 grades haul roads, at speeds to 6.5 mph, in 4th gear. Unit smooths surface for high-speed movement of production haulers. Travel speeds to 26 mph.

Adams — Trademark AG-1352-M-b

LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

WHERE QUALITY IS A HABIT

To speed road-building

Gar Wood Dozecasters are matched to the most powerful tractor of them all . . . the Euclid TC-12. A rugged C-frame supplies maximum rigidity against bending or distortion. Screw-type thrust arms provide easy adjustment . . . are attached with "deep anchored" lugs that can't bend or smash. Heavy-duty swivel bearing lets one man angle blade. Gar Wood cable-control units offer quick, accurate control of the 18-ft. Dozecaster moldboard.

On Gar Wood 75's, independent travel is one of many features that speed production. Operator can hoist or swing while moving. Worm-driven boom hoist with spring-loaded brake permits fast hoisting with complete safety. Production is further speeded by ease of maintenance of the compact machinery deck . . . the 75B gets back to work faster. It's built by specialists in ¾ yard excavators!

GAR WOOD

PLANTS IN WAYNE AND

from clearing to concrete-

go GarWood

During the next ten years, speed will be of primary importance if production is to keep pace with proposed schedules of the new highway program. Where work on segments of this program is already under way, Gar Wood equipment is proving its ability to speed production, from clearing to concrete!

With Gar Wood equipment, production is faster because of advanced design. Component parts function with that degree of efficiency needed for fast, steady production. Find out how you can go Gar Wood "all the way." Call your Gar Wood dealer, or write direct to: Customer Service Department, Gar Wood Industries, Inc., Wayne, Mich.

Gar Wood - St. Paul dump bodies are structurally stronger at all critical stress points . . . built to take the punishment of shock loading. Matched with "Strong-Arm" hoists, they offer the smoothest, most dependable team on the market. "Strong-Arm" design eliminates one-sided lifting strains. Dumping is fast, safe . . . even on steep slopes!

Gar Wood - Buckeye finegraders can finish 100 feet of 25-foot cross-section per hour in the toughest conditions. Many users report 400-foot-per-hour production in ideal conditions. Power for extra-tough cuts is supplied by positive, non-slip chain drive. Hardened steel cutting-teeth offer long life. Power reverse and hydraulic lift save valuable production time.

INDUSTRIES, INC. Wayne, Michigan

YPSILANTI, MICH.; FINDLAY, OHIO; MATTOON, Ill.; RICHMOND, CALIF.

"We built our entire plant around our Manitowoc shovels"

G. L. Schuster, Superintendent

Dubuque Stone Products Co.
Dubuque, Iowa

This midwestern quarry relies on two husky Manitowoc Model 2000 shovels to keep an average 125 tons of all-sized crushed stone going through its plant every hour. "Our primary crushers," said Superintendent Schuster, "will take every rock that will go through the Manitowoc's 1¼-yd. dippers. The place to really break stone is in the quarry and that is the basis of our operation with the Manitowocs . . . blasting as we do, between 50,000 and 80,000 cubic yards at a time!"

350 Tons Per Hour

In addition to feeding the crushers, the two shovels often handle as much as 350 tons an hour straight from quarry blasting to railroad cars. "Actually," Mr. Schuster explained, "our manufacturing schedule is set up on the basis of 35 minutes to the rail car. Whether the stone is straight from the quarry or from the crusher, we still call upon the shovels to handle seven dippers per truck load at 2,500 to 2,700 pounds for each cycle."

"What we need in a shovel," said the superintendent, "and what the Manitowocs give us, is a 'delicate feel'—the placing of the dippers for both the stone and the boulders. For instance, the operator very seldom has to retrack once he sets in. This is a definite advantage because boulders and rock are massed together after blasting and simply grabbing for a dipperful could cause a slide or make top boulders drop down with damage to the machine itself."

50 Cars a Day

"With the two Manitowocs digging," Mr. Schuster noted, "We can fill as many as 50 rail cars a day . . . with 50 tons of stone per car. In addition, we send out an average of 1,000 tons by truck per day. That means we load approximately 8,000 rail cars per year. And every ounce of this stone is handled by our two Manitowocs!"

Low Upkeep

These rigs work eight hours a day, five days a week. Even with this heavy schedule, service and maintenance costs are negligible. Both shovels are operated on 25 gallons of diesel fuel a day and are greased twice daily.

The original swing band is on the first machine purchased. This rig was purchased in 1948 and as Mr. Schuster says, " . . . is operating as good today as when new. We have been so pleased with it we eventually ordered the second one from Manitowoc.

"One of the features we like best is the lighter dipper stick which gives us an average use of 6 to 8 weeks' work from our hoisting lines."

Excellent Service

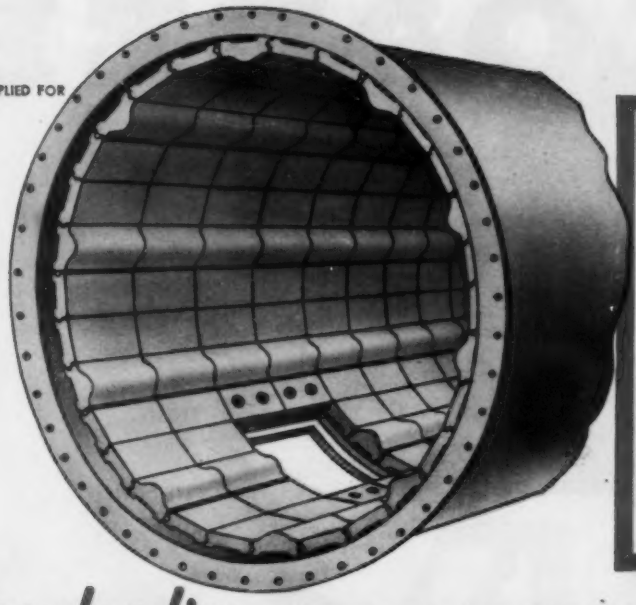
"Summing up the picture," the superintendent said, "what we like about the Manitowocs and the benefits we get from them can best be expressed by the fact that no matter how good the equipment is, you cannot buy service — and *service is what we get* from the Manitowoc people!"

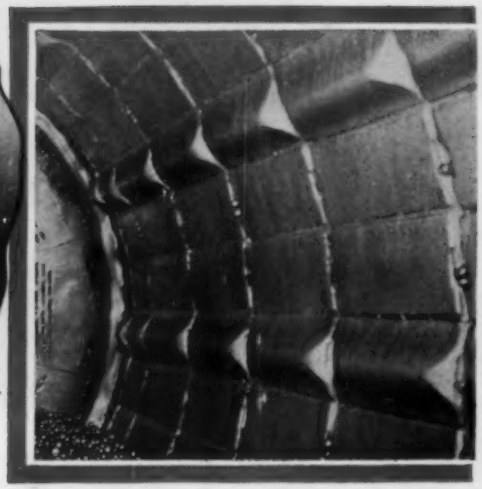
Get all the benefits of superior Manitowoc performance in *your* quarry or pit. A call to your Manitowoc distributor will bring full information and specifications.

Manitowoc Engineering Corp.
Manitowoc, Wis.

MANITOWOC
SHOVELS 1-5½ YD. Speed Crane CRANES 20-100 TON

PATENT APPLIED FOR





Standardize WITH B&W UNIVERSAL LINER PLATES

SAME CASTING FITS ALL MILL SIZES
B&W LINER PLATES RAISE PERFORMANCE, LOWER COSTS

The new B &W Tube Mill Liners have advantages that mean reduced costs in capital, time and labor.

Cost per ton of material ground is reduced, for the practical reasons listed below. Check them—you may find that one, or a combination, of these qualities will solve your existing problems.

- Lower Initial Costs—No pattern and chiller costs —the result of standardization.
- Longer life of liners—Uniform wear will result from better quality control on a mass production casting, utilizing permanent molds. Size is ideal for uniform chill and heat-treatment.
- Longer life for different applications can be realized by a selection of proper materials. This design lends itself to either chilled irons or wear steels.
- Direct labor cost and the "down-time" to install the liners are reduced. Castings are easily handled due to small size and weight. Less fatigue of workers. No cranes needed to handle lightweight liner castings.
- Cost reduced for storage space. Minimum storage space required as small castings "stack" easily. Records simplified with one design of casting interchangeable for all size mills.
- Saves money on liner inventory. One design fits all diameters of mills, permitting standardization. Quicker unloading and storage possible.
- Savings in breakage claims and delays for replacements. Hard brittle irons are frequently broken in shipment when large castings are used. Small castings are rugged and almost impossible to break by handling.
- Savings in determining most efficient wear pattern. Same castings will produce wear profiles consisting of all lifter ribs, all flats or combination of both, including straight or spiralled lifter pattern.

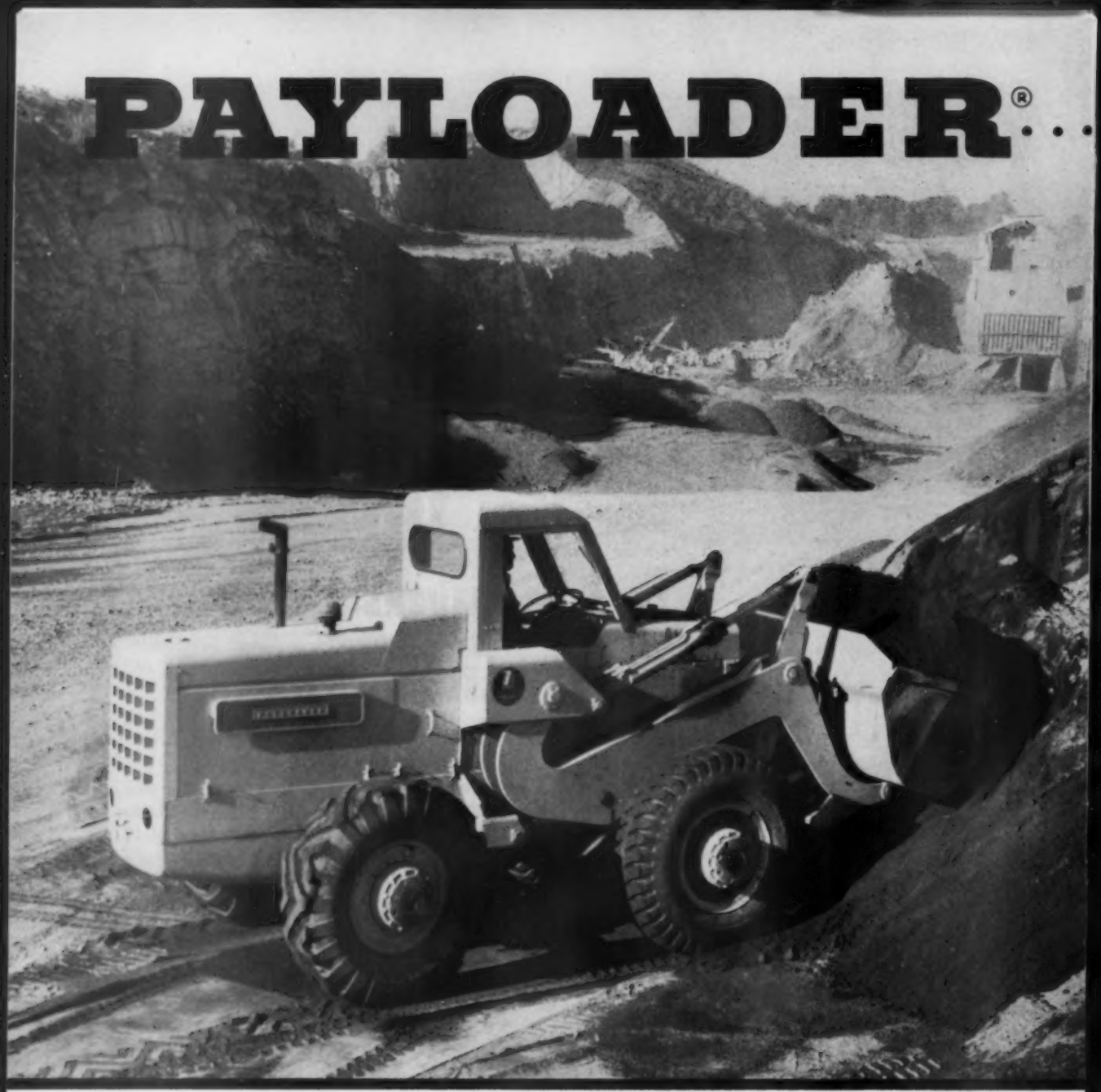
Liners are supplied in two nominal thicknesses, 1½″ and 3″ with 1½″ high lifters. Castings are 6″ wide x 12″ long. Positive seating of small castings on mill shell means less breakage of castings under operating conditions. For additional information on B&W Universal Tube Mill Liner Plates, write The Babcock & Wilcox Company, Process Equipment Department, Barberton, Ohio.

BABCOCK & WILCOX

BOILER DIVISION

S-464

PAYLOADER®...



40° Break-out at Ground Level

You can get *heaped bucket loads* and you get them *faster* and *easier* with this new bucket action. Most important of all — you *keep bigger payloads* because the bucket can be tipped back a full 40 degrees at ground level *before* it is raised with less spillage while digging and while carrying.

Tremendous Pry-out Action

Tremendous pry-out force is obtained by using the breakout pads on the ground as a fulcrum for leverage. The load forces opposing the pry-out action are thus transferred to the ground through the pads instead of being concentrated on the front axles and wheels.

Power Transfer Differentials

This exclusive "PAYLOADER" feature makes 4-wheel-drive traction even more reliable. The wheels with the best footing get the most power. You get traction and *action* instead of wheel-spinning inaction on sand, gravel and snow.

"No-Stop" Power-shift

Instant finger-tip shifting — on the go. There's no stopping for a RANGE shift, no "clutching." Forward, reverse control can also be operated under full engine speed, in any gear . . . all this plus torque converter drive.

"KEEPS A FULL LOAD IN THE BUCKET!"

Faylor Lime and Stone Co.
depends on 5 PAYLOADER units

Faylor Lime and Stone Company, Winfield, Pa., has been using "PAYLOADER" tractor-shovels since 1948 in both of their quarries and for highway construction work. Its present fleet includes five model HM's — the pioneer 4-wheel-drive tractor-shovels — and a big 2¼-yard model HO purchased in July, 1956.

Having had many years of experience with tractor-shovels, they *know* what they're talking about when it comes to *tractor-shovels.* Robert Sankey, Equipment Superintendent, says, "Our 'PAYLOADER' units have given years of satisfactory service. Today's 'PAYLOADER' is designed and built for production and long life with low maintenance. The model HO, with the roll-back action on its large 2¼ cubic yard bucket, has practically eliminated other means of loading out materials in our operation."

The Assistant Quarry Superintendent says, "The model HO has plenty of power and its power-shift transmission takes the work out of operating. The roll-back bucket motion keeps a full load in the bucket. The operator likes the two-brake-pedal feature."

If *you* want to find out what a "PAYLOADER" can do, your nearby "PAYLOADER" Distributor will be glad to put one on your job so you can see for yourself how much *more* a "PAYLOADER" can produce.

Hydraulic Load-Shock-Absorber

This load-shock-absorber in the hydraulic system smooths out the ride, permits faster load-carrying speeds over rough terrain — with less spillage. You get more load in the bucket — you keep more in the bucket while traveling at higher speeds . . . and the result — you deliver more yards per load and more loads per hour.

PAYLOADER®
MANUFACTURED BY
THE FRANK G. HOUGH CO. LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

THE FRANK G. HOUGH CO.
750 Sunnyside Ave., Libertyville, Ill.
Send data on 4-wheel-drive tractor-shovels as checked:

- ☐ Model HO (2¼ Yd. Payload, 1¾ Yd. Struck)
- ☐ Model HH (1¾ Yd. Payload, 1½ Yd. Struck)
- ☐ Model HU (1½ Yd. Payload, 1 Yd. Struck)

Name _____

Title _____

Company _____

Street _____

City _____

State _____

53

PICTURE OF THE YEAR

Bagorama by P. Kent

Ask Us

PERCY KENT BAG COMPANY, INC. HUmboldt 3-9800 Kansas City • Buffalo • New York

Hendrick H ... Means High Quality for Quarries

Hendrick . . . Pioneer Perforator of Special Quality Steels for 80 Years

Take Hendrick's 80 years of experience in selecting and specifying the best analyses of steel for the crushed stone. industry. Add to it Hendrick's 80 years of experience in perforating plate for vibrating screens and you end up with a combination that can't be beaten.

That's why Hendrick Perforated Plate stands up longer and affords more accurate sizing. No other screening medium can compare to it for uniformity of mesh, for non-blinding clearance and for long, trouble-free service life. Hendrick perforated *H* quality steel is supplied in any desired size or shape of openings.

It can also be furnished flat or corrugated. Write for details.

SEE OUR CATALOG IN SWEET'S

Hendrick
MANUFACTURING COMPANY
39 DUNDAFF STREET, CARBONDALE, PA.
Sales Offices in Principal Cities

PERFORATED METAL • PERFORATED METAL SCREENS • WEDGE-SLOT AND HENDRICK WEDGE WIRE SCREENS • ARCHITECTURAL GRILLES • MITCO OPEN STEEL FLOORING • SHUR-SITE TREADS • ARMORGRIDS • HENDRICK HYDRO-DEHAZER.

GENERAL NYGEN® TIRES

...built tougher for the toughest jobs!

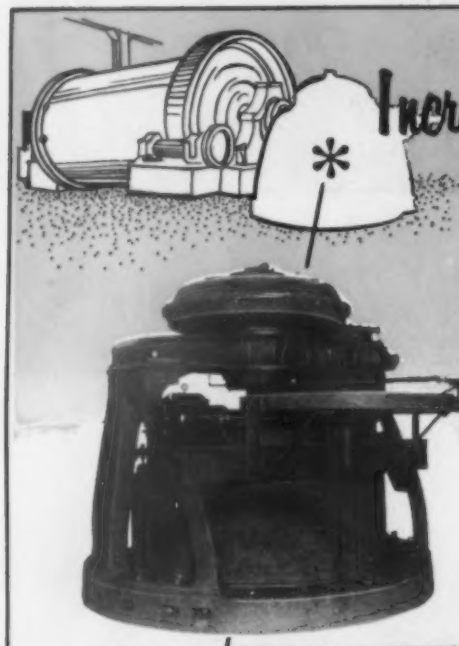
Featuring Stronger-than-Steel NYGEN® CORD

Designed to make every off-the-road job show a profit, big, rugged General Truck Tires are built to take brutal punishment . . . built to out-perform any other tire on any project. Unexcelled for strength with *exclusive* Nygen Cord construction and delivering dependable tractor-like flotation and traction, Generals provide the ultimate in job-hazard protection. Their job performance records prove Generals best!

specify GENERALS on your new equipment

THE GENERAL TRUCK TIRE

THE GENERAL TIRE & RUBBER CO. • Akron, Ohio



Increased CEMENT PRODUCTION

BRADLEY HERCULES MILLS

* *as a preliminary pulverizer for compartment or tube mills.*

The quickest, most economical way to increase your grinding capacity

For the cement manufacturer with excess kiln capacity . . . here is the answer to INCREASED CAPACITIES at an appreciable SAVING IN HORSEPOWER. The Bradley Hercules Mill, used as a preliminary pulverizer, before compartment mills or tube mills, results in INCREASED PRODUCTION of finished material at a LOWER COST per barrel.

Rugged, dustless construction, maximum accessibility keep maintenance costs at an absolute minimum.

Automatic electrical feed control eliminates manual operation.

For complete information, write for Catalog No. 57

Bradley PULVERIZER CO.

LONDON **ALLENTOWN, PENNA.** BOSTON

Each month, PIT and QUARRY publishes, not one, but *two* classified sections—a big "Broadcast" section in the back-of-the-book and a smaller section in The Concrete Manufacturer. (In this issue, you'll find the Broadcast pages starting on page 385, the "CM" section on page 375.)

A number of our classified advertisers already have tried "hitting 'em with both barrels"—with gratifying (and profitable) results. If you have used equipment to sell—or are looking for something to buy—related to both the quarrying and concrete industries, why don't *you* take advantage of this double opportunity?

Rates are printed at the top of each section, or write today for attractive contract schedules.

PIT AND QUARRY PUBLICATIONS, INC.
431 S. Dearborn St. Chicago 5, Ill.

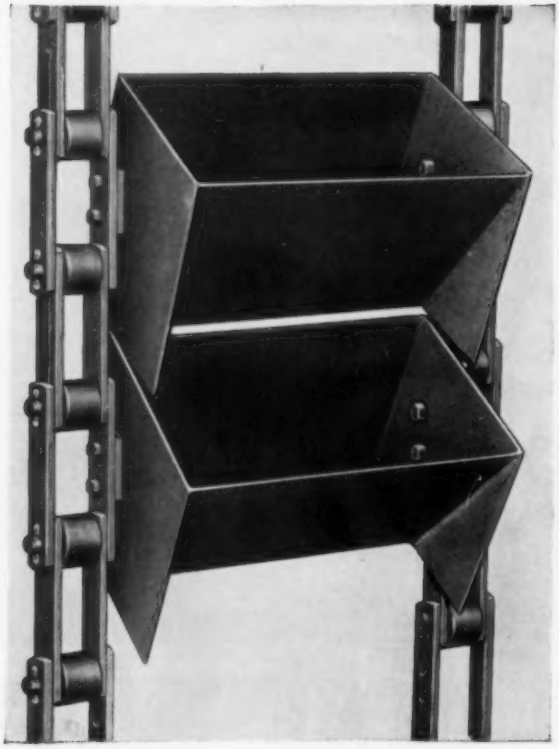
When...

- ★ when large tonnages must be elevated . . .
- ★ when large lumps must be handled . . .
- ★ when continuous operation is involved . . .
- ★ when low maintenance is important . . .
- ★ when relatively slow-speed operation is advantageous

Why...

- ★ because balanced buckets hold more . . .
- ★ because of the greater number of close-spaced buckets . . .
- ★ because there's no overhung load on the chain . . .
- ★ because slower speeds permit smoother operation . . .
- ★ because chain is guided there's less whipping

...the LINK-BELT Super-Capacity is your best buy in bucket elevators



COMPARING bucket elevators, you'll find the Link-Belt Super-Capacity side-suspension design (at left) responsible for a host of performance improvements. Load is balanced — buckets are suspended at their center of gravity between the two strands of SS-type steel roller chain, reducing strain and wear.

The chain itself is specially designed for this service. Link-Belt's new short-pitch chain design means less impact at head sprockets. Thus, while operating at a speed fast enough to deliver high capacity, it is still well within the range required to assure low wear.

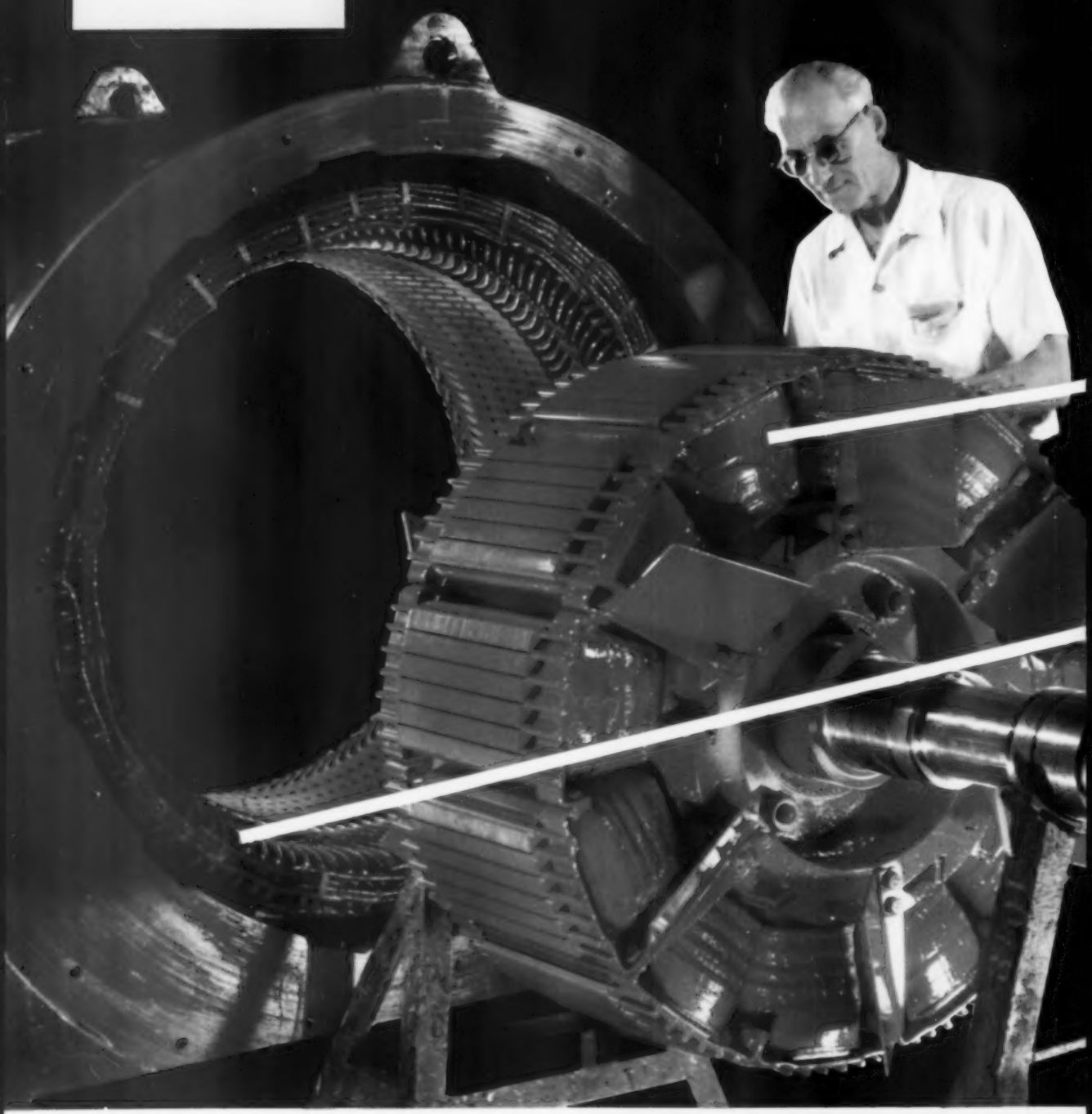
Your Link-Belt office has details. Call today.

LINK-BELT

BUCKET ELEVATORS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World. 14,335

ONLY Allis-Chalmers



ALLIS-

MOTORS are "double protected"

New Integrated Field Coils Plus *Silco-Flex* Stator Insulation Provide Superior Motor Protection . . . Under Any Operating Conditions

1

Integrated Field Coils are bonded in heat-stabilized resins, enclosed in a resin-impregnated sheath of oriented glass fibers and bond-locked on the pole structure . . . dimensionally stable to withstand heating and thermal shock, vibration and fatigue at elevated temperatures . . . sealed throughout against atmospheric contaminants and fully protected against destructive forces.

2

***Silco-Flex* Insulation** provides a homogeneous, void-free insulating wall of silicone rubber on stator coils. It is unexcelled in life and thermal stability at high temperatures . . . resistant to most chemicals, water, weather . . . outstanding in flexibility and resilience . . . able to withstand abrasion and corona . . . resistant to physical and mechanical forces.

Exclusive Allis-Chalmers "double protection" is available on large electrical machines with operating temperatures through Class B range.

Silco-Flex is an Allis-Chalmers trademark.

For more information on these quality insulation systems contact your nearby A-C office, or write Allis-Chalmers, Power Equipment Division, Milwaukee 1, Wisconsin for Integrated Field Coil Bulletin 05R8525 and *Silco-Flex* Insulation Bulletin 05R8341.

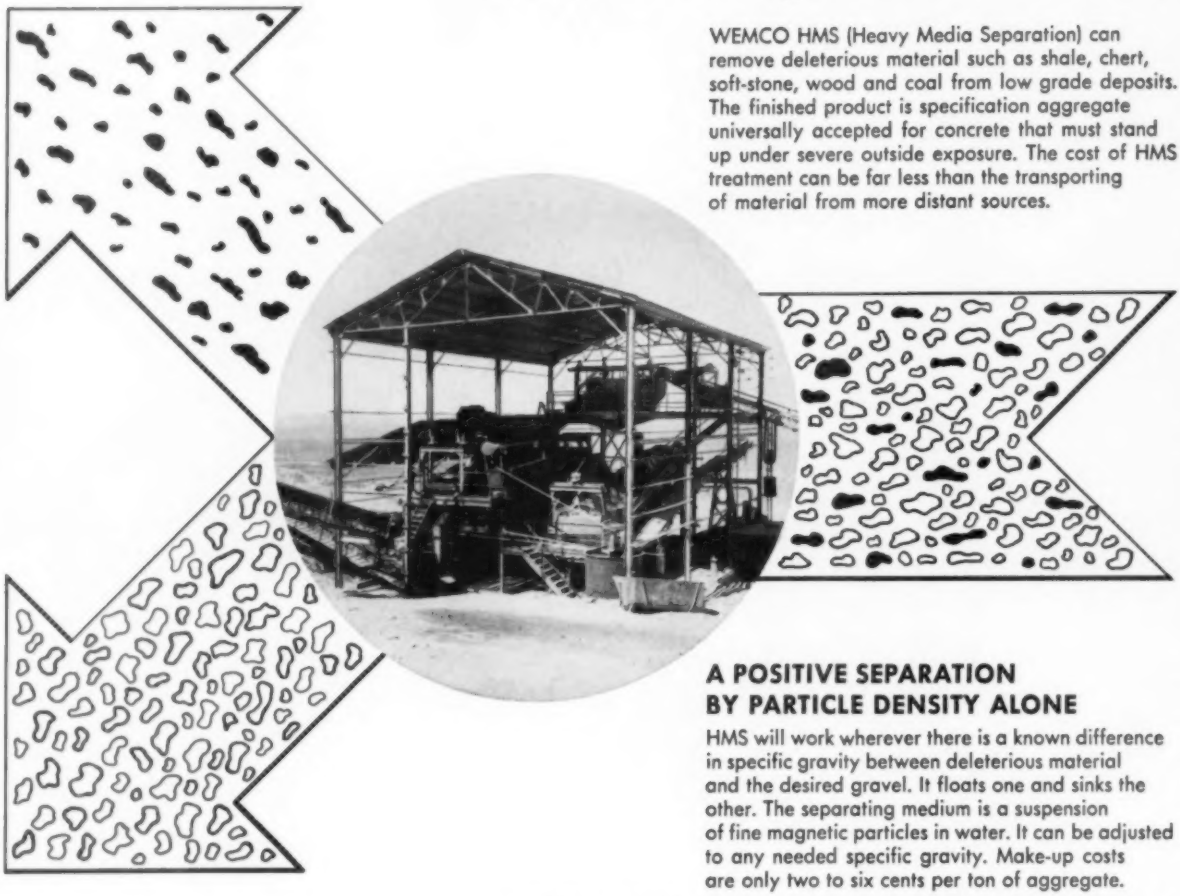
Allis-Chalmers "Double Protection," with integrated field coils and Silco-Flex stator coil insulation, adapts this 600-hp, 2300-volt, 600-rpm synchronous motor to the most severe operating conditions.

CHALMERS

A-C ALLIS-CHALMERS

A-5221

GET HIGH QUALITY AGGREGATE
from low grade sources



WEMCO HMS (Heavy Media Separation) can remove deleterious material such as shale, chert, soft-stone, wood and coal from low grade deposits. The finished product is specification aggregate universally accepted for concrete that must stand up under severe outside exposure. The cost of HMS treatment can be far less than the transporting of material from more distant sources.

A POSITIVE SEPARATION BY PARTICLE DENSITY ALONE

HMS will work wherever there is a known difference in specific gravity between deleterious material and the desired gravel. It floats one and sinks the other. The separating medium is a suspension of fine magnetic particles in water. It can be adjusted to any needed specific gravity. Make-up costs are only two to six cents per ton of aggregate.

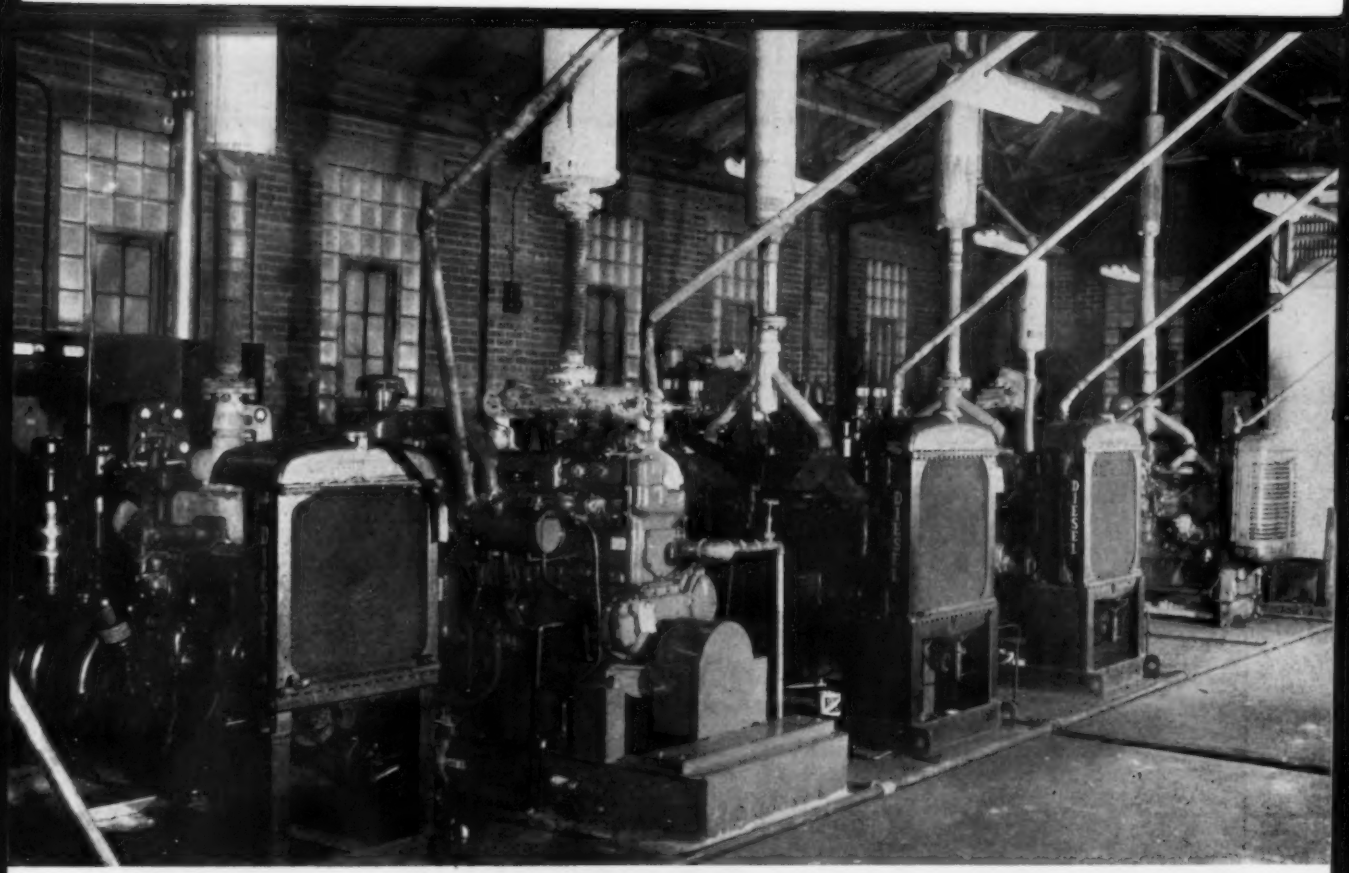
WEMCO MOBIL-MILLS ARE YOUR INDUSTRY'S CHOICE

To date every HMS user in the sand and gravel industry has chosen the Wemco Mobil-Mill. It is a complete plant — pre-engineered — pre-fabricated — and of pre-determined cost. It is so thoroughly proven in design that it operates from the first day. It goes up in minimum time and at minimum cost. Then it knocks down and moves on when the deposit is exhausted. The Wemco HMS Mobil-Mill is available in capacities from 5 to 500 tons per hour.

Write today for further information

WEMCO®
WESTERN MACHINERY COMPANY

Dept. K-2210, 650 FIFTH STREET • SAN FRANCISCO, CALIFORNIA
50 CHURCH STREET • NEW YORK, NEW YORK
129 ADELAIDE STREET WEST • TORONTO, CANADA
20 BOULEVARD MALESHERBES • PARIS (8e), FRANCE
Representatives in principal cities of the United States and Canada and in major countries throughout the world.



Here are five of eight International diesels that have driven Ready-Power generators in Standard Carbon's powerhouse for a total of 107 engine service-years. The UD-1091, second from left, is seven months old. The other 7 power units average over 15 years each of dependable service.

8 Ready-Power International driven GENERATORS CUT ELECTRIC COSTS 43%

Standard Carbon's International power units going strong after 107 service-years

The Standard Carbon Co., Steubenville, Ohio, is a nationally famous manufacturer of carbon brushes.

President W. F. Rogers fills in these details of their powerhouse operation: "We started in business in 1928 operating on purchased power. Back in 1939 we set up our own powerhouse—starting with an International PD-80 diesel power unit on a 48KW Ready-Power generator. Shortly thereafter we bought two more of these units. Today our eight Ready-Power generators are all driven by Internationals—*and we are generating power for 43% less than we pay for the 15% of the electricity we still purchase.*"

Supt. George Rogers adds: "Good service with only minor repairs sums up our experience with Internationals. Our Internationals have totalled 107 service-years—an average of over 13 years per engine. And only recently I rebuilt one of the 17-year-olds for the first time and still was able to reuse many of the original parts including the crankshaft!"

You, too, can get this same kind of completely dependable, low-cost power for your generator sets...or any driven machine in your pit or quarry. Simply call your easy-to-locate International Power Unit Distributor or Dealer. He can make power recommendations that are right for your needs. Equally important, his service facilities, his parts stock, his desire to be of service will help you get the most out of your engines. Call him soon.

INTERNATIONAL®

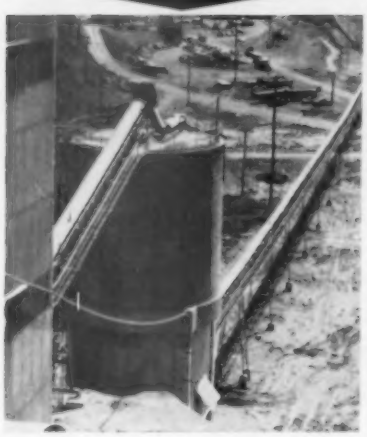
International Harvester Company
180 N. Michigan Ave., Chicago 1, Illinois

CONSTRUCTION EQUIPMENT

A COMPLETE POWER PACKAGE INCLUDING: Crawler, Wheel, and Pipe-Boom Tractors . . . Self-Propelled Scrapers and Bottom-Dumps . . . Crawler and Rubber-Tired Loaders . . . Off-Highway Trucks . . . Diesel and Carbureted Engines . . . Motor Trucks

The RIGHT Answer to Your BULK STORAGE Needs:

MARIETTA CONCRETE SILOS



For efficient, low cost storage and handling of sand, gravel, stone or cement, have a MARIETTA storage system engineered to your particular operation.

Marietta silos are economically erected in any desired capacity . . . any number of units. Interlocking concrete stave construction provides safe, dry storage . . . resists wind, shock or fire . . . requires a minimum of maintenance.

Conveyors, feeders, discharge systems or other auxiliary equipment for your particular material handling requirements can be mounted on the sturdy walls of a Marietta silo.

Depend on Marietta's 41 years of experience to design and erect the most efficient storage system for your need under one cost-saving contract. No delays due to critical material shortages with a Marietta installation . . . erection is quickly and efficiently handled by factory trained personnel.

Write for Marietta's Modern Industrial Storage Systems Booklet and the right answer to your bulk storage problems.

THE Marietta CONCRETE CORPORATION
41 Years Know-How in Pre-Cast Concrete Construction
Marietta, Ohio

BRANCH OFFICES: Baltimore 21, Md., Charlotte 6, N.C., Nashville, Tenn., Jamestown, N.Y.

Legal Decisions

By LEO T. PARKER
Attorney at Law
Cincinnati, Ohio

Not Subject to Property Tax

A few weeks ago a higher court held that a "concrete mixer" permanently mounted on a motor truck chassis is not subject to a property tax.

For example, in *Crown Concrete Company v. Conkling,* 75 N. W. (2d) 351, state taxation officials assessed the Crown Concrete Company with personal and property taxes on concrete mixers mounted on motor trucks. The higher court held that when a concrete mixer is permanently mounted on the truck, it constitutes an integral part of the motor truck, subject to the motor vehicle registration fee computed on the basis of gross weight, including the weight of the mixer and the concrete carried therein; and that hence the mixer is not subject to personal or property tax. The court said:

"Rarely is a mixer removed from the truck on which it is mounted. Such removal would take two men a day and a half. It follows that these truck-mounted mixers were exempt from property tax."

Contributory Negligence

All higher courts agree that any person who suffers an injury from his own negligence cannot recover damages from any person, firm, or corporation. Last month a higher court extended this usual rule of law to include a buyer of concrete blocks, stacked by the seller's truck driver.

For illustration, in *Stoddart v. Idaho Concrete Products Company,* 283 Pac. (2d) 922, it was shown that one Stoddart purchased between 800 and 1,000 concrete blocks from the Idaho Concrete Products Company. The blocks were delivered to Stoddart's property and were stacked in a pile about 10 ft. long, 5 ft. wide, and 6 to 7 ft. high, on the ground near Stoddart's house. The following day Stoddart removed some of the blocks. The next day, as he was removing more blocks from the pile and delivering them to a worker who was putting them in place in constructing a building, the pile fell on his right leg and foot, causing severe injuries.

Stoddart sued the Idaho Concrete Products Company for heavy damages, contending that the employees of the Idaho Concrete Products Company negligently and carelessly piled the concrete blocks so that the resultant pile was insecure and dangerous. The higher court refused to award Stoddart any damages and said:

"One who knows and appreciates, or in the exercise of ordinary care should have known and appreciated, the existence of danger from which injury might reasonably be anticipated must exercise ordinary care to avoid such injury. Thus, where the defect or danger is patent or obvious, it is contributory negligence to fail to exercise ordinary care to avoid it."

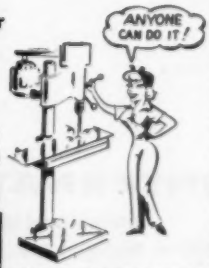
Subcontractor Liable for Delay

Here is an interesting legal question: "Is a subcontractor liable in damages to a general contractor for the subcontractor's delay in complet-

FIRMEX PLATE

RESISTS ABRASION, SHOCK, FATIGUE, IMPACT AND CORROSION

- Designed for longer wear under rough usage
- Easy to machine
- Easy to weld



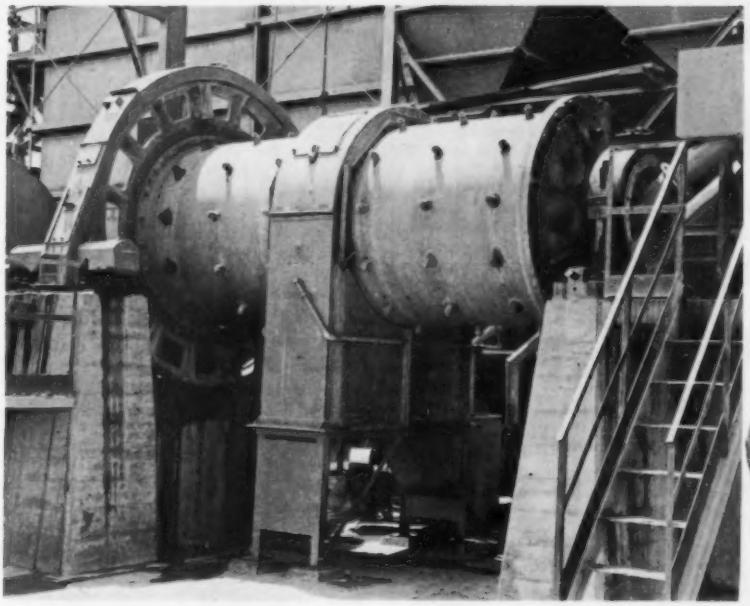
FOR YOUR SHAFTING USE THE BEST . . . USE FIRMEX
FIRMEX H. T. (Hot Rolled) or FIRMEX P. G. (Turned Ground and Polished - Close Tolerance)
High Tensile • Longer Wear • Easy Machining

INTERNATIONAL ALLOY TOOL STEEL CO.
4531-33 St. Clair Ave. Cleveland 3, Ohio

see what Marcy can do for YOU!

to help beat the competitive sand and gravel situation

You get all of these advantages by manufacturing **specification** sands with Marcy Center Peripheral Discharge Grinding Mills...



Produce desired sand on location, save hauling costs.

Manufacture sand from waste gravel

Better Sand Product. Grinding in a Marcy CPD Mill will produce for you a uniformly cubical shaped product with same characteristics of shape and strength throughout the range of sizes produced. This results in:

- **stronger concrete**
- **better finish on concrete**
- **better slump characteristics**
- **use of less cement**

Operating Advantages. Compared with crushing, experience has proved you will get these additional advantages by grinding with Marcy CPD mills:

Low Cost...low maintenance, less steel consumption and less power per ton result in an overall cost generally less than 25c per ton, exclusive of ammortization.

Flexibility...by varying rate of feed, pulp dilution and discharge port area it is possible to change gradation of finished product to meet different specifications.

Cleaner Operation
Wet or Dry Grinding
Capacities from 2 to 200 dry tons per hour.

NO EXTRA CHARGE FOR MARCY® EXPERIENCE

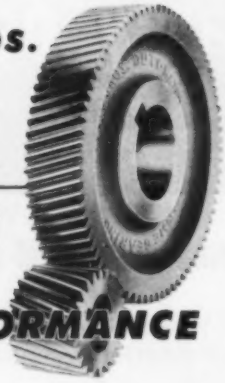
THE MINE AND SMELTER SUPPLY CO.

DENVER NEW YORK SALT LAKE CITY EL PASO

SALES AGENTS AND LICENSED MANUFACTURERS THROUGHOUT THE WORLD

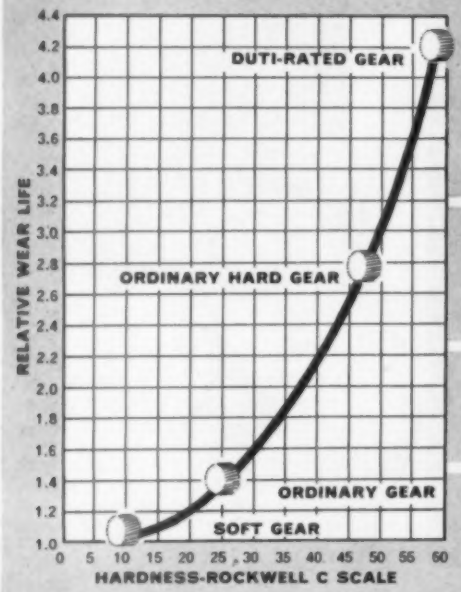
HERE'S WHY FOOTE BROS.

Duti-Rated
LIFETIME GEARING



GIVES BETTER PERFORMANCE
...LONGER LIFE

GEAR PERFORMANCE COMPARISON CHART



DUTI-RATED GEAR—
Hardened after cutting. Precision processing permits maximum hardness while holding accuracy within extremely close tolerances.

ORDINARY HARD GEAR—
Hardened after hobbing and shaving; hardness limited to maintain reasonable accuracy.

ORDINARY GEAR—
Hardened before cutting; hardening limited to maintain machinability.

SOFT GEAR—
Low hardness—excessive size required because of low capacity.

LINE-O-POWER Speed Reducer

AND YOU GET
Duti-Rated
Gearing in EVERY
Line-O-Power Drive

LINE-O-POWER Right Angle Drive

Horizontal GEARMOTOR Speed Reducer

Horizontal VARI-MOUNT
Variable Speed Drive

Vertical LINE-O-MOUNT Speed Reducer

Write for DUTI-RATED Gear and LINE-O-POWER Catalogs.
See how you can get more for your drive dollar.

this trademark stands for the finest industrial gearing made

T. M. REG. U. S. PAT. OFF.

FOOTE BROS.
Better Power Transmission Through Better Gears
FOOTE BROS. GEAR AND MACHINE CORPORATION
4571 South Western Boulevard Chicago 9, Illinois

ing his contract, if the delay resulted from weather conditions over which the subcontractor had no control?"

Recently a higher court answered this question in the affirmative.

For instance, in *P.C. Corporation v. Ward*, 275 S. W. (2d) 443, the testimony showed facts, as follows: A contractor named Ward contracted to construct a 500,000-gal. prestressed concrete clearwell in a city. The specifications called for an earthen pit to be excavated about 18 ft. deep and large enough in circumference to allow a space of 2 ft. between the outside walls of the clearwell and the sides of the earthen pit. This space was to allow room for construction, but was to be filled after construction had been completed. Ward subcontracted the construction of a portion of the clearwell to the P.C. Corporation at the contract price of $19,871.

The testimony showed that the P.C. Corporation did most of the work required of it, but delayed completion a long time on account of the lack of materials. During this delay considerable rainfall caused about 9 ft. of water to accumulate in the space between the clearwell and the sidewalls of the pit, with the result that the concrete floor of the clearwell buckled and unforeseen reconstruction work was required; *i.e.*, a French drain had to be constructed under the floor of the clearwell and then a reconstruction of the concrete floor had to be done. There was evidence that none of this reconstruction would have been required if P.C. Corporation had completed its contract within the specified time. The testimony showed that if P.C. Corporation had completed its contract within the specified time, or had taken care of the dewatering, the floor of the clearwell would not have buckled, and the expenditure of $1,637.51 by Ward would not have been required. In short, the evidence was sufficient to prove that the fault was that of P.C. Corporation.

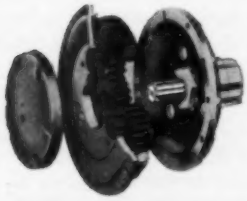
Since there were definite specifications and a contract containing a time limit and no requirement that Ward would take care of the dewatering of the space between the outside of the clearwell and the sides of the earthen pit, the higher court held that P.C. Corporation must bear the extra expenses incurred by Ward to complete the project according to specifications. The higher court said:

"The evidence sustained finding that subcontractor's (P.C. Corporation's) delay in construction of clearwell, with resulting flooding and

How to control that costly broken-shaft nuisance . . .

CLARK Planetary AXLE

Primary Reduction in the center section, by helical bevel pinion and gear.



Second Reduction in the drive wheel —a sun gear splined to the axle shaft and three planet gears driving an internal gear in the inner periphery of the wheel, as close as possible to the point where tractive effort is applied. Two types: steering and non-steering.

Check the extraordinary record of performance established by this axle —in the toughest service any axle is required to meet:

- **Excavator Cranes**
- **Tractor-Shovels, Bulldozers, other construction machines**
- **Heavy Duty Trucks for highway and off-highway operations**
- **Tandem-Drive Units for all applications**

Here's a simple engineering idea that hit the jack-pot in spectacular fashion—the Clark Planetary Drive Axle. File these startling facts in your mind:

Reduced torque load on shafts—Putting the planetary assembly (the final reduction) in the drive-wheel hub, takes 70 per cent of the torque load *off the axle shafts.* Result: shaft wind-up and surge virtually eliminated—and *broken axle shafts practically unknown!*

Less weight—yet stronger—an astonishing fact: severest torque loads, typical of extreme off-highway service are handled easily by gears and shafts smaller in size and therefore considerably lighter in weight than conventionally designed axles of equal capacity.

Road speeds up to 30 mph—an outstanding combination of rugged power characteristics plus highway speeds up to 30 mph for job-to-job travel —a big and vital saving.

Special for truck operators—faced with extremely difficult hauling conditions, truck owners have converted regular units to 4-wheel drive by installing two Clark Planetary axles (with Clark Torque Converter and Clark Transmission)—*with complete success.*

Don't fail to get the facts about this revolutionary solution to numerous problems. The coupon will get those facts to you—immediately.

CLARK® EQUIPMENT

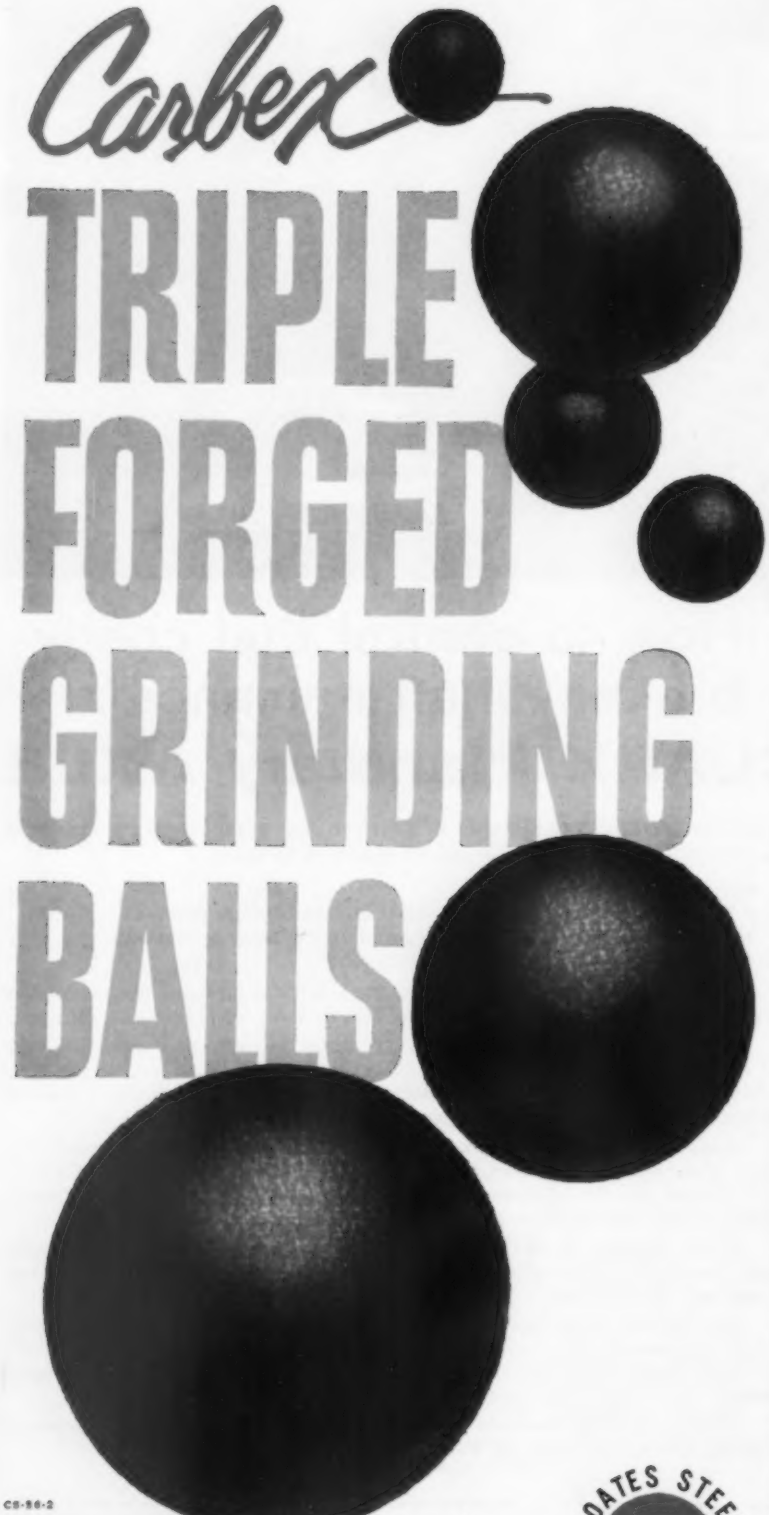
CLARK EQUIPMENT COMPANY • AXLE DIVISION, Buchanan 21, Michigan

Please send illustrated bulletin on the Clark Planetary Axle.

NAME_____ POSITION_____

FIRM_____ ADDRESS_____

CITY_____ STATE_____



CS-50-2

COATES STEEL PRODUCTS CO.

GREENVILLE, ILLINOIS

LARGEST EXCLUSIVE MANUFACTURER OF GRINDING MEDIA

imposition on prime contractor (Ward) of requirement to do certain work, was due to subcontractor's fault."

For comparison, see *Blake v. Scott*, 121 S. W. 1054, 123 S. W. 1181. In this case there were no specifications as to just what work should be done within a definite time, and the higher court held that the prevailing party was without fault in doing as he did.

Can Recover Full Payment

A few days ago the president of a construction company asked this legal question: "If a contractor does not strictly follow specifications on concrete work, can he recover any payment from the property owner?"

It is the general rule that an ordinary person who sues to recover payment on a contract must prove that he has fully performed his part of the agreement; otherwise he is not entitled to a favorable verdict. However, this rule of law is not applicable to contracts made by cement contractors. If the property owner fails to prove that he suffered damages by the contractor's breach, the latter may recover full payment.

For example, in *Lillis v. Anderson*, 21 So. (2d) 389, the testimony proved that a contractor and a property owner entered into a written contract by the terms of which the contractor agreed to perform certain construction work.

The property owner refused payment for the work, and the contractor filed suit. During the trial the owner testified that he was not satisfied with the work performed by the contractor, who failed to follow strictly the specifications.

The higher court considered all testimony and decided that the contractor had not completed his work exactly in accordance with the terms of the contract, but this court held the contractor entitled to recover full and complete payment because the owner failed to prove that he suffered any damages resulting from the failure of the contractor to comply strictly with the terms of the contract.

Must Prove Agency

Recently a higher court held that a principal or employer is not liable for payment for materials purchased by an agent, unless the testimony conclusively shows that the agent was an employee "authorized" to purchase materials for his legal employer. Hence, a general contractor is not ordinarily liable for payment for materials purchased by a subcontractor.

For example, in *F & M Ready Mix Concrete Company v. Neale*

Thor has rock drills for every job—every budget

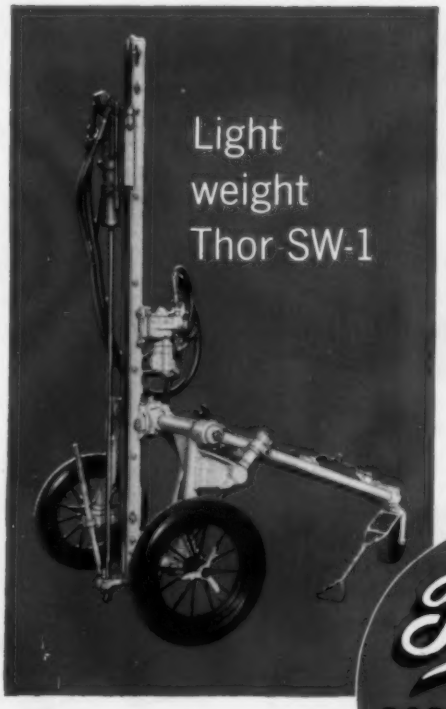
THOR DRILLCAT

Thor's super-powered 105M drifter rock drill • Rugged Thor BW-2 wagon drill mast and air feed motor • Self-propelled with two 7½ h.p. Eimco air motors, power aplenty to haul itself and air supply • Rigid frame, proved in tractor design, long-lasting, low maintenance • Aircraft-type accumulator in hydraulic system maintains complete rigidity • Simple hand-operated track take-up • No track locks required • Large flat platform, good for tool and fuel storages—ideal for operator when drilling toe holes.

Ask your Thor contractor tool distributor to demonstrate Thor's SW-1 and BW-2 wagon drills and the fabulous new Thor MM-2 Drillcat. Thor Power Tool Co., Prudential Plaza, Chicago 1, Ill.

THOR BW-2

The medium weight BW-2 comes equipped with Thor 4" bore drifter. Has 800 to 1000 lbs. pulling power for steel removal, a 5 h.p. rotary air motor, variable speed control.



THOR SW-1

Thor's lightweight SW-1 delivers real economy in rock drilling. When equipped with a 55 lb. sinker, its lower air requirement permits the use of a smaller capacity compressor. Thor's SW-1 drills holes in any direction, at any angle—on level or sloping ground. 3-wheel reinforced compact rig—wet or dry operation—mast swings 360° vertical or horizontal—handles up to 3½" bore drifter.

Thor
PORTABLE POWER
TOOLS

THOR POWER TOOL COMPANY, CHICAGO

Atlanta • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Cleveland • Denver • Detroit • Houston Indianapolis • Kansas City, Mo. • Los Angeles • Milwaukee • Newark • Long Island City, N.Y. • Philadelphia Pittsburgh • Richmond • St. Louis • San Francisco • Seattle • Toronto, Canada • Export Division, New York City

MEET SIZING SPECS

1. The GILSON Testing Screen is the standard sizing control of the industry. Engineers specify it. Contractors use it to check aggregates at the job site.

2. Progressive producers have been using the GILSON Screen for fifteen years. It's fast and accurate. It takes a beating, stays fast and accurate after years of hard, continuous use.

3. What about you? Are you going to get your share of the $33-billion highway program? With the GILSON Testing Screen you'll meet sizing specifications with minimum time, labor, and cost.

4. The GILSON Screen makes two to seven separations simultaneously — 4-inch to 200-mesh — in five minutes or less per complete test. Field reports show that a GILSON Screen purchased now will serve you at least ten years under the most severe operating conditions, and with practically no maintenance.

5. Write for complete information. Do it now.

A sand attachment for handling 8-inch sieves is optional with the GILSON Screen.

GILSON SCREEN CO.
MALINTA, OHIO

Construction Company, 294 Pac (2d) 355, the testimony showed that the Neale Construction Company had a contract to lay conduits, and a cement finisher was engaged by the Neale Construction Company to lay sidewalks. The contract between the Neale Construction Company and the cement finisher provided that the former could terminate the contract if the cement finisher's work was unsatisfactory, and that the Neale Construction Company would make payments jointly to the cement finisher and the F & M Ready Mix Concrete Company which furnished the materials.

In later litigation, involving payments to the F & M Ready Mix Concrete Company, the testimony showed that officials of the latter read the contract effective between the Neale Construction Company and the cement finisher.

The higher court held that the cement finisher was an independent contractor and not an agent of the Neale Construction Company, which was not liable to the F & M Ready Mix Concrete Company for cement and other materials delivered to the cement finisher. The court said:

"Where an agent is authorized to purchase goods and material for the principal, there is an implied right on the part of the agent to charge the merchandise to the credit of the principal. We are unable to see what that rule has to do with this case. For it to apply, it must be shown that the agent (cement finisher) is authorized to buy the merchandise on behalf of the principal (Neale Construction Company). That has not been shown herein."

Injunction Against Picketing

A reader asked this question: "Will a court issue an injunction against peaceful picketing?"

According to a leading higher court decision, the answer is yes, if the testimony shows that any attempt was made to coerce the employer to take steps in violation of the employee's rights to join or not join a labor union.

For example, in *Bitzer Company v. Local 604, International Brotherhood,* 110 N. E. (2d) 674, the testimony showed that the Bitzer Company's salesmen did not belong to a union, but the company did employ mechanics and service station workmen who belonged to unions. According to the testimony only one of the salesmen belonged to a union, and his name is Delaney. Further testimony showed that Delaney violated his employer's rule and the

FOR ON-THE-JOB USE . . . A HANDY BLASTING GUIDE

A valuable aid in planning your construction and quarry operations, this folder contains data gathered from 48 different projects. It provides, in table form, accurately detailed information pertaining to geology, excavation, drilling equipment, bit performance, drill pattern, blasting data and explosives ratio for each project.

Printed on heavy paper stock, CONSTRUCTION CASE HISTORIES is a handy guide for use at blasting sites. This offer is one more aspect of Cyanamid's Explosives Service, which also includes expert advice and guidance in establishing good community relations prior to blasting. These and other Cyanamid services are all designed with a single purpose; to insure the speed, accuracy and success of your blasting operations.

Mail this coupon for your copy of CONSTRUCTION CASE HISTORIES.

CYANAMID

AMERICAN CYANAMID COMPANY
EXPLOSIVES DEPARTMENT
30 Rockefeller Plaza, New York 20, N. Y.

Please send me *Construction Case Histories.*

Name_____

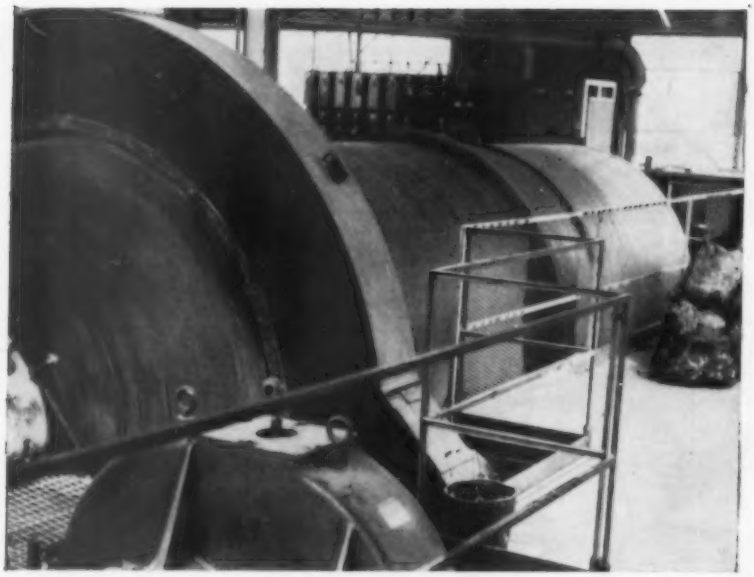
Title_____

Company_____

Street_____

City_____ Zone____ State_____

Sales Offices: New York City • Latrobe, Pa. • Pottsville, Pa., Scranton, Pa. • St. Louis, Mo. • Bluefield, W. Va.



Hardinge 9′ x 22′ Pebble Tube Mill in an Ohio plant producing silica flour.

Hardinge TUBE MILLS...

...for wet grinding

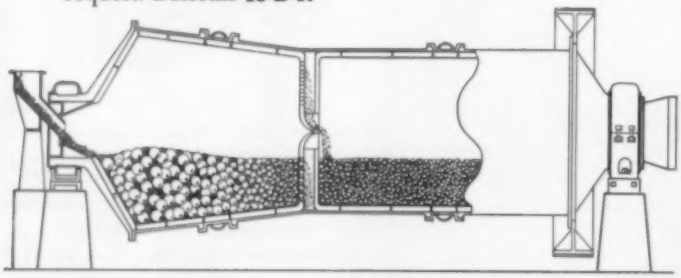
(in water or acid pulps)

Titanium Pigments
Manganese Dioxide
Diatomaceous Earth
Limestone

...for *dry* grinding

Fillers
Silica Flour
Gypsum
Carbon Black
Pigments
Cement materials

Regardless of the requirements, Hardinge Tube Mills are designed to meet specific needs. Available from 2 to 10 feet in diameter; 6 to 35 feet in length; single or multiple compartments; with acid proof lining of rubber, silica and porcelain. Complete specifications on request. Bulletin **18-B-8.**



Tricône compartment Tube Mill with grate and lifters.

HARDINGE
COMPANY, INCORPORATED

YORK, PENNSYLVANIA • 240 Arch St. • Main Office and Works

New York • Toronto • Chicago • Hibbing • Houston • Salt Lake City • San Francisco

Bitzer Company paid Delaney in full to that date, and discharged him. The union began picketing the Bitzer Company. As a result of the picketing, the dealer's mechanics and service station employees stayed away from work, and suppliers and others refused deliveries and services.

In subsequent litigation, the higher court ordered the union to stop picketing the Bitzer Company, and said:

"We are thus called upon to determine whether coercion by a union of an employer for the sole purpose of inducing him to sign a contract with that union when his employees have expressed a desire not to belong to that union is against public policy. The public interest, as well as a respect for the rights of the individual, demands that a workman should be free to join a union or not to join. . . . Any attempt to coerce employers to take steps in violation of these rights is, in our opinion, against public policy."

Law of Extra Payment

According to a late higher court decision, a contractor is entitled to receive payment for "extra" work only if he proves that he supplied extras at the request of the property owner.

For illustration, in *Wangel v. Ferro Concrete Construction Company,* 136 N. E. (2d) 683, the higher court awarded a contractor several thousand dollars damages because, from the testimony, the jury decided that the contractor had furnished certain tools and equipment not specified in the original contract. Hence, this additional service was not within the scope of the original contract and therefore reasonable compensation was forthcoming.

Payment of Reasonable Value

Last month a higher court held that a leasee of gravel land must pay a reasonable price for gravel removed from certain land not included in the lease contract, notwithstanding that he proved that he removed such gravel by mistake and error.

For example, in *Remillard Brick Company v. C. Materials Company,* 302 Pac. (2d) 627, the testimony showed facts, as follows: By written lease the Remillard Brick Company leased to the C. Materials Company 160 acres of land for the purpose of removing gravel. The rental was based upon the amount of gravel removed, with the minimum rental of $300 a month. Between the land leased and a county road was a strip of land owned by Remillard Brick Company which was not included in the lease. The C. Materials Com-

ONE GREASE...ONE GUN CUTS INVENTORY...FROM 3 TO 1

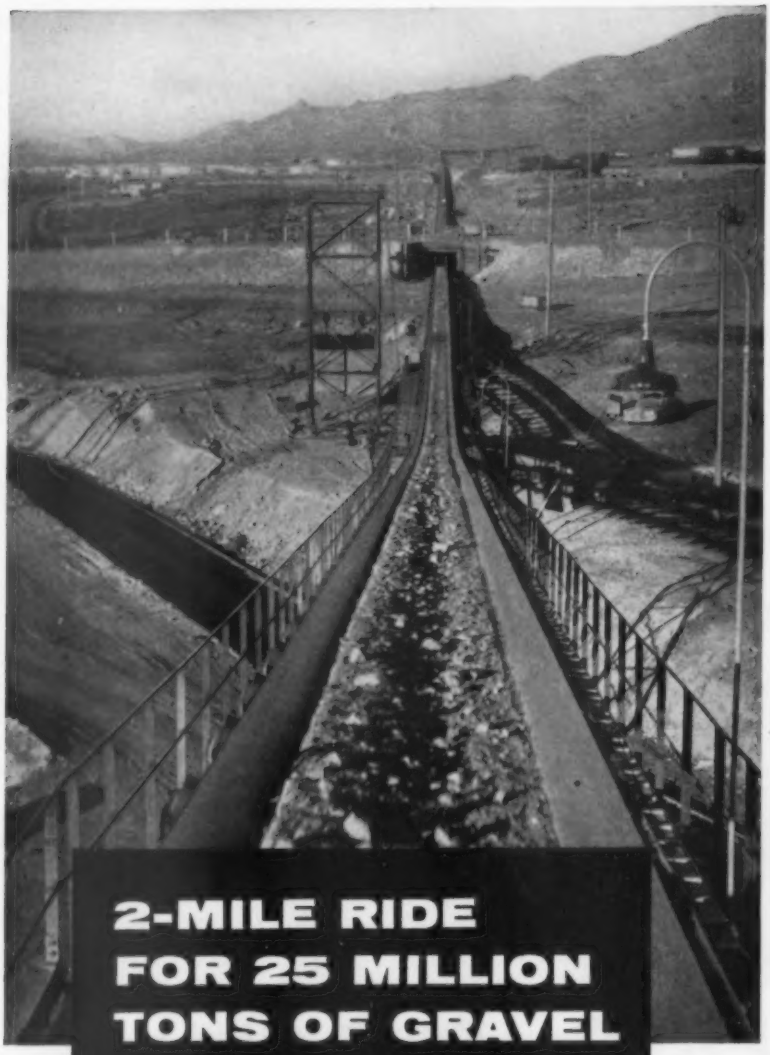
Don't bother with 3 different greases — chassis, wheel bearing and water pump! Sinclair LITHOLINE® Multi-Purpose Grease does the job of all 3 . . . does away with the need for separate pieces of lubrication equipment.

Thanks to LITHOLINE, you use just one grease, one gun — cut inventory from 3 to 1. No danger of misapplication or contamination. You'll discover that LITHOLINE lengthens lube intervals, prolongs equipment life. It saves you time, trouble and money.

A Sinclair Lubrication Engineer will be glad to show you how Sinclair LITHOLINE Multi-Purpose Grease can help you get the most out of *your* equipment. Call your nearest Sinclair Representative, or write Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, N. Y. 20, N. Y. *There's no obligation.*

SINCLAIR LITHOLINE®

MULTI-PURPOSE GREASE



To help build Southern Pacific Railroad's 13-mile roadbed across Great Salt Lake, Morrison-Knudsen Co. had Hewitt-Robins develop a bulk materials handling system. In ton-miles-per-hour capacity, this system surpasses any previous belt conveyor installation. Its conveyors travel at speeds up to 850 fpm, carry 75,000 tons of rock and gravel per day, load barges at 12,000 tons per hour.

The entire installation—including 3 scalpers, 13 conveyors, 23,000 feet of belting, 4,700 idlers, a 164-ft. radial stacker, 10 belt feeders, 2 recovery conveyors and 27 speed reduction drives—was designed, manufactured and delivered by Hewitt-Robins in less than eight months. To find out how H-R products and services can help you, contact our nearest representative, or Hewitt-Robins, Stamford, Connecticut.

HR HEWITT-ROBINS

CONVEYOR BELTING AND IDLERS . . . POWER TRANSMISSION DRIVES
INDUSTRIAL HOSE . . . VIBRATING CONVEYORS, SCREENS & SHAKEOUTS

pany removed from this strip a quantity of gravel.

In subsequent litigation, the higher court held the C. Materials Company liable for payment at the rate of 25 cents per ton for the gravel removed from the strip of land not included in the lease contract.

Employee Proves Case

According to a late higher court decision, an employee is entitled to receive compensation under the State Workmen's Compensation Act if he proves (1) that he is suffering from silicosis; (2) that he contracted the disease while working for his present employer; (3) that the employee's condition progressively grew worse; and (4) the employee now is permanently disabled.

For illustration, in *Eggert v. Tennessee Products,* 286 S. W. (2d) 874, it was shown that an employee named Eggert is permanently and totally disabled by reason of silicosis, an occupational disease. The testimony showed that he had operated both air and rotary drills in rock. The proof showed that he wore no mask.

Eggert sued his employer for compensation under the State Workmen's Compensation Act and proved that in the fall of 1953 he reported to the company doctor, and after an examination he was hospitalized. After a series of examinations five doctors concluded that he was suffering from advanced stages of silicotuberculosis. In the course of the treatment Eggert was subjected to surgery for the removal of a portion of his lung and the insertion of a plastic device which he is now carrying. After eight to nine months of hospitalization he left the hospital. Since then he has been without gainful employment.

The higher court awarded Eggert substantial compensation, saying that the evidence supported the findings that the employee suffered from silicosis while employed by the employer; that the employee's condition grew progressively worse; and that the employee was permanently and totally disabled.

Practice of Subterfuge

Generally speaking, a restrictive contract of any covenant not to commence or acquire a competitive business, is valid and enforceable only with respect to the seller of the business.

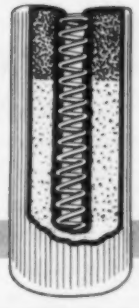
In *Hessel v. Hill,* 38 S. W. (2d) 490, one Hill owned a cement business in a town named Liberty. He sold the business to one Hessel for $28,000 and signed a contract that he would not re-enter the same busi-

WINSLOW
Full-Flow
FILTERS

Case History Report No. 32 Shows Why Engines Protected by WINSLOW FILTERS Last Longer

A bank accident in the spring of 1955 dropped this D-7 bulldozer into 20 feet of water for 24 hours. After crankcase, radiator and other oil and grease containers were drained and flushed, and the tractor completely cleaned, it was put back to work and has operated *ever since* without overhaul, because it was protected by Winslow full-flow filtration.

Time Between Overhauls Doubled On Texas Firm's Diesel Engines



The CP* Principle

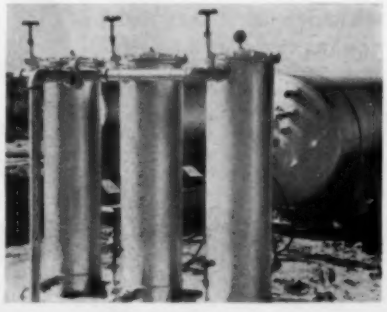
Winslow patented CP* (Controlled Pressure) elements are designed to continuously self-adjust the pressure within the filter and allow for a full stream of filtered oil without opening by-pass valves. This is accomplished through the dual flow capacity, with two types of material.

Since 1952 all powered equipment of Gifford-Hill & Company, Inc., with fifteen plants producing aggregates and concrete in Texas and Louisiana, has been protected with Winslow Full-Flow Filters. This includes dozens of diesel locomotives, tractors, ready-mix trucks and draglines, with several makes of engines.

Before installing Winslow Filters, the time between overhauls on heavy duty diesels rangd from 3,000 to 6,000 hours, depending on the type of engine and service. Now the time between overhauls is 6,000 to 12,000 hours, a tremendous saving in down time as well as overhaul costs, plus substantially longer operating life for the engines. Corresponding improvements are made on other types of equipment.

Fuel Filters, Too

All equipment at Gifford-Hill is further protected by Winslow Fuel Filters, which remove moisture, acid, dirt and other impurities from fuel oil, to protect working parts and improve performance on all types of engines.



For complete data on the application of Winslow Filters, please write or call

WINSLOW ENGINEERING & MANUFACTURING COMPANY

4069 Hollis Street, Oakland, California

CP* *is fully protected by patents and trademarks*

That's the usual reaction . . . How do we dare sell a Sand Classifier with a "performance-satisfaction-or-you-send-it-back" guarantee, when operating conditions vary so widely! Are we sticking our necks out with this new 1957 policy?

We don't think so, and here's why:

Since 1922 only twice were Auto-Vortex installations returned. Neither were then guaranteed, but we accepted them cheerfully. *All the rest,* numbering in the thousands, have performed without failure.

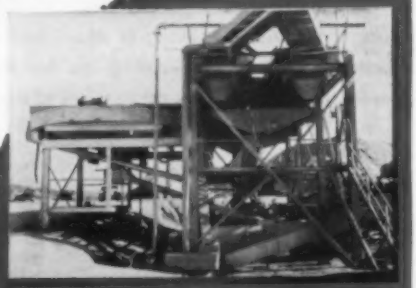
Because each Auto-Vortex installation is a *custom* job . . . engineered to meet specific conditions and requirements. *We* don't go for "package units!"

Because, where other classifiers have failed, Auto-Vortex Classifiers have augmented or replaced them to successfully produce the required specifications. (This accounts for over 50% of our current business.)

Because more operators every year, basing selections on performance records instead of advertising claims, are getting successful production *from the start* with *complete* Auto-Vortex installations, custom-engineered by the Charles E. Wood Company.

Yes, more and more operators are freely attributing their sharper splits, removal of the middle bulge, and saving of valuable fines to Auto-Vortex Classifiers. It is the consistency of their good reports that encourages us to embark on this 1957 policy . . .

PERFORMANCE SATISFACTION GUARANTEED.



This 20' A-V Bowl Classifier (left half of picture) recovers from 4 to 20 TPH of fines that were otherwise wasted. One of many cases where Auto-Vortex Classifiers augment a "package-unit" to meet "capacity and product requirements."

CHARLES E. WOOD CO.

AUTO VORTEX CLASSIFIERS

906 N. WATER ST • MILWAUKEE 2, WIS.

ness in this town, or "within a radius of 10 miles from the city" for a period of ten years. In subsequent litigation, the higher court held that Hill violated his contract with Hessel, the purchaser of the business in Liberty, and said:

"We hold this conduct constituted a flagrant breach of the restrictive contract. The course pursued by Hill is not in accord with fair dealings and good faith."

Seller Makes False Promise

According to a late higher court decision, if a seller of a quarry misrepresents the profits or gross sales of the business, the purchaser may rescind the contract and recover the full contract price.

For example, in *Nussbaum v. Hetzer*, 61 Atl. (2d) 508, the testimony showed facts, as follows: One Hetzer, being desirous of selling his business, engaged the services of a business broker, who contacted one Nussbaum. Hetzer named a price of $10,500. Nussbaum told Hetzer that he was interested principally in the income from the business. Hetzer then stated that the business averaged between $700 and $800 per week and he would guarantee $500 per week. After some further discussion Nussbaum agreed to purchase the business for $10,000.

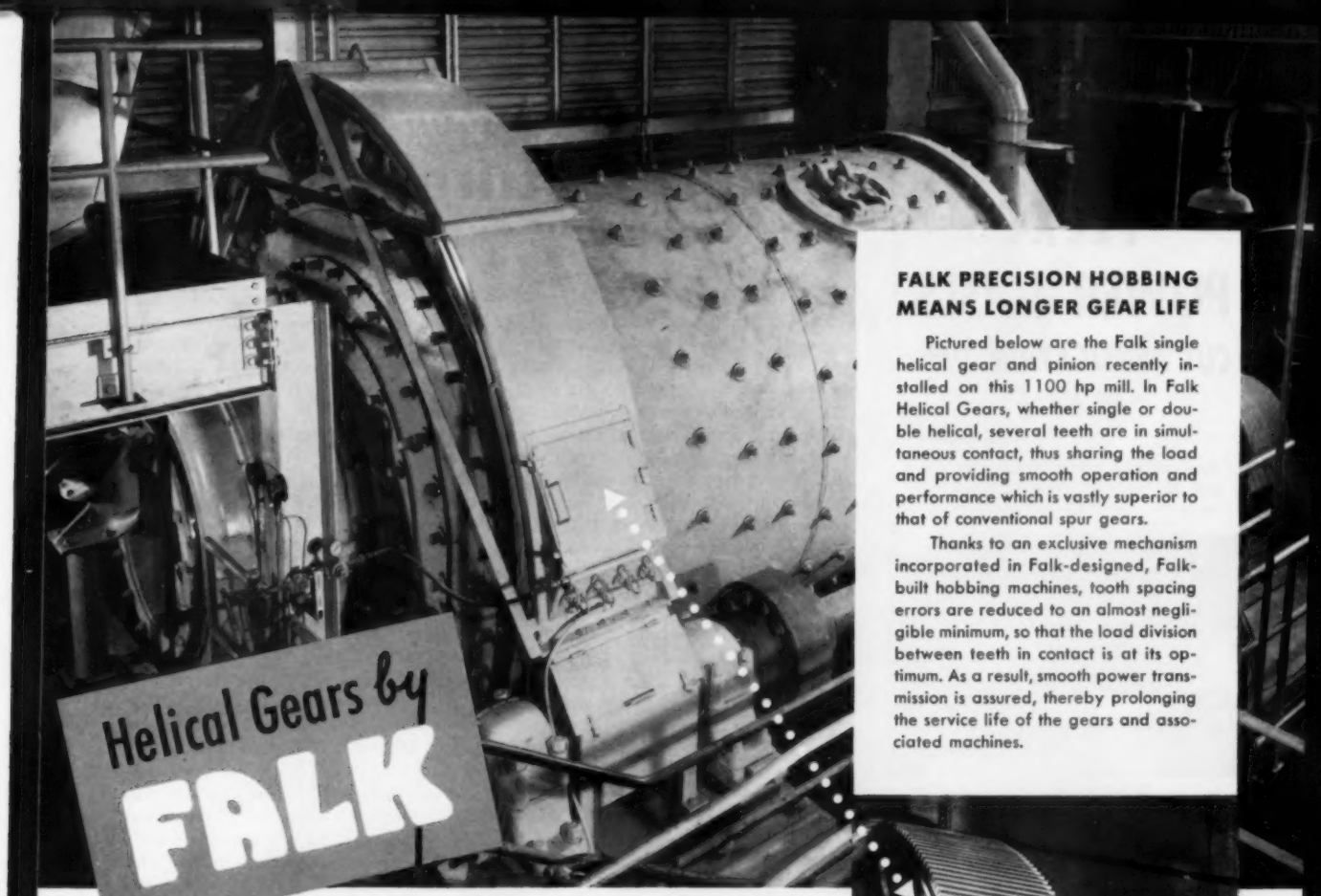
From the time Nussbaum took over the business, the business sales never were above $161. Nussbaum filed suit and asked the court to rescind the contract and compel Hetzer to return to him the $10,000 paid for the business. The court did so, and said:

"I am of the opinion that Hetzer falsely represented the amount of the sales for the purpose of inducing the complainant (Nussbaum) to purchase the business."

Suit to Stop Quarry Trucks Lost by City of Wauwatosa

The Wauwatosa Stone Company, Wauwatosa, Wis., a city adjoining Milwaukee to the west, has won a suit started by the city of Wauwatosa. Legal action was brought to force the firm to discontinue operating its trucks through the streets of Wauwatosa. Residents had complained about dirt and noise.

Circuit Judge Dreschler decided in favor of the company, stating that the quarry was operating before the adoption of the zoning ordinance. The judge ruled, however, that the stone company must use exits and entrances from and to the quarry at certain points to avoid driving trucks on streets whose residents had made the complaints.



Helical Gears by FALK

FALK PRECISION HOBBING MEANS LONGER GEAR LIFE

Pictured below are the Falk single helical gear and pinion recently installed on this 1100 hp mill. In Falk Helical Gears, whether single or double helical, several teeth are in simultaneous contact, thus sharing the load and providing smooth operation and performance which is vastly superior to that of conventional spur gears.

Thanks to an exclusive mechanism incorporated in Falk-designed, Falk-built hobbing machines, tooth spacing errors are reduced to an almost negligible minimum, so that the load division between teeth in contact is at its optimum. As a result, smooth power transmission is assured, thereby prolonging the service life of the gears and associated machines.

...your Best Buy in gears!

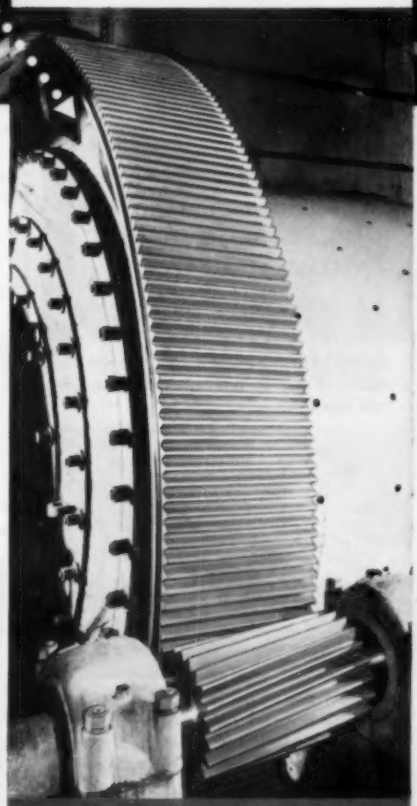
In these times of industrial expansion and modernization, Falk Helical Gearing is more than ever the first choice of experienced, economy-minded users of gear-driven equipment.

This increasing preference is the result of proved performance. Falk Helical Gears and Pinions provide *better performance over a longer service life* because they are correctly engineered...their accurately generated teeth have extra depth and extra capacity...gear efficiency, as shown by actual test data, is 98+%...the highest you can buy!

Other superior features include: high reduction ratios which permit use of higher motor speeds for greater efficiency and reduced power costs; maximum resistance against abrasive wear; smooth, helical gear action. All these factors contribute to the long service life of trouble-free operation for which Falk gears are famed the world over.

When expanding or remodeling your production facilities, it pays to remember that the performance of your equipment will not be any better than the performance of the gears that drive it. So, if uninterrupted production is important to you, specify Falk Helical Gears. They're available in sizes up to 18 ft. in diameter...in capacities up to 2000 hp.

Consult any Falk representative—also, write for
Engineering Report 6170, "Advantages of Helical Gearing."



FALK

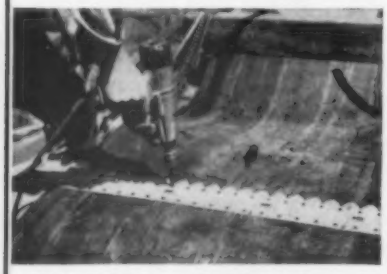
...a good name in industry

THE FALK CORPORATION, 3001 W. CANAL ST., MILWAUKEE 1, WIS.

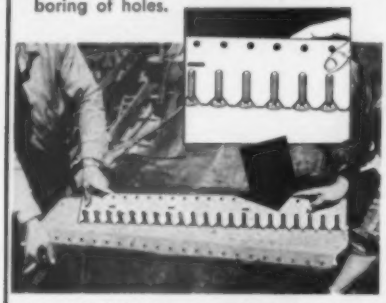
Representatives in Most Principal Cities

NEW
FLEXCO
POWER TOOLS
CUT APPLICATION TIME
IN HALF

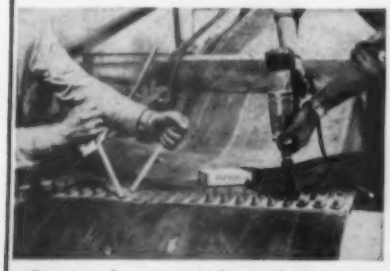
Your two man belt team can now join a belt 30" wide in 15 to 20 minutes . . . using the new FLEXCO Power Tools.



The FLEXCO Power Tool Boring Bit used with electric or air impact tool speeds boring of holes.



New FLEXCO Templet positions bolts for quick joining of belts. Reaching under belt has been eliminated.



Running down nuts is fast with the new FLEXCO Power Wrench used with electric or air impact tool. Two Bolt Breakers are used together to complete the joint.

If you are interested in speeding up fastener application, order the new Power Tools from your local FLEXCO Distributor. Write for Bulletin F-112-A.

FLEXIBLE STEEL LACING CO.

4623 Lexington Street • Chicago 44, Illinois

Manufacturers' News

GERALD T. RAUBACH is now associated with the New York District Office of Harnischfeger Corp., Milwaukee, Wis., as excavator salesman.

Starting in 1939 as a machinery erection apprentice, Mr. Raubach has advanced through various departments including such assignments as electrical service engineer and assistant manager of the service department. Since 1955 he has been assistant sales manager of Harnischfeger's Electric Shovel Division.

G. T. Raubach

G. E. Long

GEORGE E. LONG, past president and retired chairman of the board of directors of Koehring Co., Milwaukee, Wis., passed away recently after a short illness. He was 70 years of age at the time of his death.

Mr. Long served Koehring as president and general manager from 1940 to 1952. He was chairman of the board until his retirement.

He was controller until 1932 when he was named treasurer and a member of the board of directors. He was appointed general manager in 1937 and president in 1940, succeeding the late William J. Koehring, one of the firm's founders, as board chairman in 1951.

Minneapolis-Moline Co., Minneapolis, Minn., announces the election of W. C. MACFARLANE, president, to the new position of vice-chairman of the board, and HENRY S. REDDIG, senior vice-president, to the office of president.

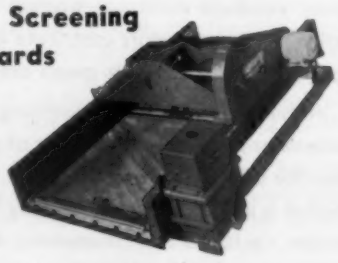
All other incumbent officers were re-elected, and William F. Foss, managing director of the firm's affiliated company in Turkey (Minneapolis-Moline Turk Traktor ve Ziraat Makineleri, A.S.) was elected controller.

Barber-Greene Company of Aurora, Ill., has announced two significant plant expansion projects.

A completely new manufacturing facility is now under construction near De Kalb, Ill., and it is anticipated that it will be in full operation by the fall of 1957. This facility will undertake the complete production of some segment of the company's broad line of bituminous mixing and paving equipment, ditchers, loaders, conveyors, car unloaders and other road construction and materials handling equipment. Heading the new plant project is general manager Frank J. Merrill, formerly assistant to company president H. A. Barber.

Simultaneously, the subsidiary plant of Barber-Greene Canada, Ltd., in the Don Mills area of Toronto, Ontario, is being expanded by the addition of some 43,000 sq. ft. of shop space and a new two-story office building. Development of the expanded Canadian manufacturing facility is under the direction of B-G Canada President Walter B. Holder.

Leahy® Integrated Heat* Screening Sets New Efficiency Standards



For the screening of difficult, damp fines such as lime, ag-lime or silica sand, the new Leahy screen with FlexElex® Integrated Heat is unmatched in its ability to deliver high, accurately sized production at low cost. FlexElex Heating is not an attachment . . . it is a fully integrated arrangement that completely eliminates bothersome flexible connectors while reducing maintenance and power consumption. Send for Bulletin 16-EH.

*Copyright 1957

Made by the Original Deister Company
Established 1906

THE DEISTER CONCENTRATOR COMPANY
911 Glasgow Avenue, Fort Wayne, Indiana

A new bulk-packed blasting agent with high velocity...for medium to fairly hard shooting

Du Pont "Nitramite®" F. R.

Here's a new blasting agent, ideal for coyote shooting or for pouring in drill holes of 3" diameter or over. Du Pont "Nitramite" F.R. has all the safety features of other blasting agents plus a much higher order of performance than other ammonium nitrate products.

While it must be loaded under dry conditions, it can be used as a top load in wet holes above a water resistant blasting agent or standard explosive to achieve maximum shooting economy. Standard "Nitramite" or "Nitramon" primers provide most effective initiation plus the ultimate in safety. The density of "Nitramite" F.R. ranges up to 1.15 depending on method of packing. It is headache-free.

Most economical unit weighs fifty pounds and is packed in 5-ply multi-wall paper bags or asphalt-lined burlap bags. Other type containers are available for special applications at slightly higher cost.

Contact your Du Pont Explosives representative for complete information, or write E. I. du Pont de Nemours & Co. (Inc.), Explosives Dept., Wilmington 98, Del.

DU PONT BLASTING AGENTS

Products of Du Pont Research

DUPONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

"Job Insurance"
FOR
HEAVY-DUTY
HAULING

Marion builds a complete line of underbody hoists (top illustration) and telescopic hoists (bottom illustration); standard, medium and heavy duty dump bodies. The photo shows an MFR 80, 8 cubic yard body with horizontal and vertical side bracing; an HD-10S double arm underbody hoist is used for dumping.

MARION HEAVY-DUTY
BODIES AND HOISTS

Marion heavy duty bodies and hoists are designed for performance, dependability and long life to give you the most in results for your money.

First quality materials and workmanship . . . simple design . . . heavy duty construction mean increased payloads with minimum down time. It will pay you to compare! You'll then know why profit-conscious owners all over the world insist on Marions for all types of hauling and dumping operations.

MARION
BODIES AND HOISTS

MARION METAL PRODUCTS CO.
MARION, OHIO, U.S.A.

Announcement of the purchase by Webster Manufacturing, Inc., Tiffin, Ohio, of the assets of the Eugene C. Stacy Load Binder business, a local concern, has been made by J. B. Nordholt Jr., president of Webster.

A new corporation has been formed to operate the business as a wholly-owned subsidiary of Webster, under the name of the Stacy Load Binder Company.

The subsidiary manufactures and markets a load binding device which is extensively used, particularly in the trucking industry.

Webster, which manufactures elevating and conveying equipment for handling bulk materials, will produce the castings for this new subsidiary.

RAYMOND R. DIRKSEN, sales engineer, has been promoted to assistant sales manager of the Dynamatic Division of Eaton Manufacturing Co., Cleveland, Ohio.

He joined the Dynamatic Division in 1951 as a sales engineer, having previously held a similar position in the motor and generator section of the Allis-Chalmers Manufacturing Co. in Milwaukee.

R. R. Dirksen

T. A. Moretti

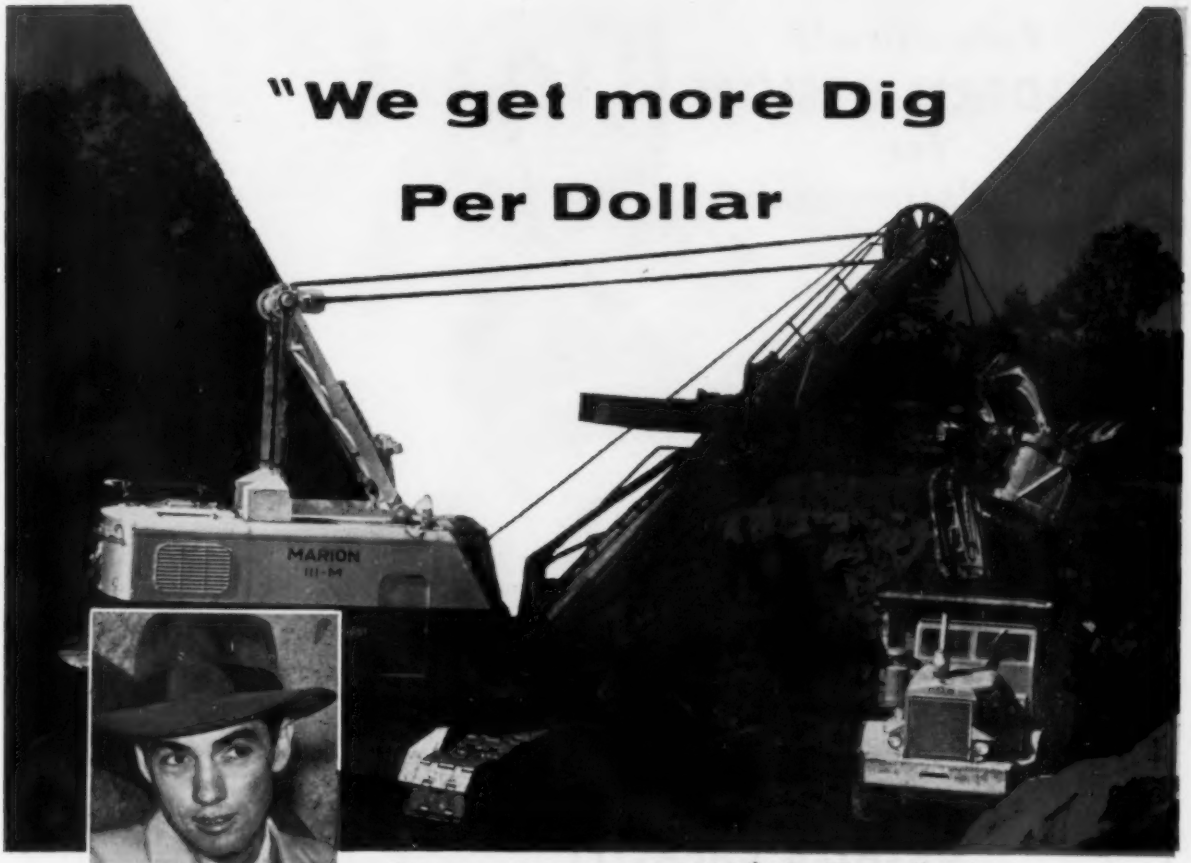
Also announced is the appointment of THOMAS A. MORETTI, member of the industrial relations staff of Eaton, to acting plant manager of the Marion Forge Division. The Marion Forge Division was formed about three years ago in a new plant at Marion, Ohio to supplement the operations of Eaton's Axle Division in Cleveland.

Mr. Moretti, associated with Eaton Manufacturing for 28 years, succeeds S. H. Wood, who has announced his resignation.

VINCENT N. DECERCHIO has been named assistant to the president of Orr & Sembower, Inc., Reading, Penn. His general duties will be in the handling of government work. He formerly was a salesman for the company in the New York City area.

Before coming to Orr & Sembower in 1952 as an application engineer, Mr. DeCerchio was employed by the Electric Storage Battery Company, Philadelphia.

"We get more Dig Per Dollar



DILLARD TEER
Vice-President

GEORGE TEER
Master Mechanic

because an ESCO Bucket Specialist job-tailored our shovel dipper,"

say the managers of Nello L. Teer Company

"Specifically tailored to *our* digging conditions, *ESCO* Buckets have profitably increased our production," agree George Teer, Master Mechanic and Dillard Teer, Vice-President, Nello L. Teer Company, Durham, North Carolina.

The Nello Teer contracting firm operates five Marion 111-M machines, all equipped with *ESCO* 4-yard shovel dippers, each specially designed for the kind of digging encountered in their operations. The firm also uses *ESCO* 2½-yard shovel dippers on seven of their ten Northwest 80-D machines, and 1-yard *ESCO* shovel dipper on their Lima 34.

Put a job-tailored *ESCO* bucket on your machine—and watch production climb! *ESCO* builds a complete line of dragline buckets, dippers, backhoes and orange-peels.

ESCO

ELECTRIC STEEL FOUNDRY COMPANY

2159 N. W. 25TH AVE. • PORTLAND 10, OREGON
MFG. PLANTS AT PORTLAND, ORE. AND DANVILLE, ILL.
Offices in Most Principal Cities
ESCO INTERNATIONAL, NEW YORK, N. Y.
IN CANADA ESCO LIMITED

Tomorrow's
MODERN DESIGN
for
Today's Demands!

MORRIS PUMPS

keep the aluminum industry rolling toward

GREATER CAPACITY

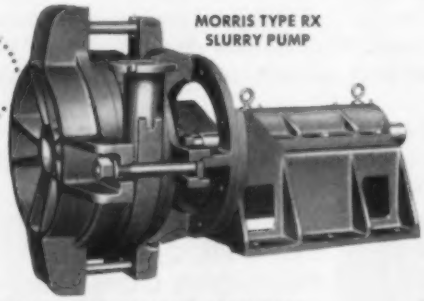
In pace with the far-sighted aluminum industry, other leading manufacturers the country over shrewdly specify Morris for heavy duty pumping.

The Morris Type RX Slurry Pump is rugged, dependable, and trouble free. It's specifically designed for heavy pumping; gives peak performance under all conditions, including heavy, coarse or fine slurries, dispersions and sludges.

The Morris pump operates with minimum attention . . . lowers maintenance costs . . . can be quickly dismantled for inspection . . . avoids lengthy lay-up time. For heavy duty pumping . . . specify Morris.

WRITE TO MORRIS TODAY for recommendations of the pump best suited to your size, capacity, specifications. Ask for Bulletin 185.

MORRIS
CENTRIFUGAL
PUMPS



MORRIS TYPE RX
SLURRY PUMP

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities

L. C. DANIELS is now general manager of the Buda Division, Tractor Group, Allis-Chalmers Mfg. Co., Milwaukee, Wis., and OWEN J. HIGGINS is general manager of the Harvey, Ill. Works where the Buda Division's material handling equipment and Diesel, gasoline, LP gas and gas engines and generator sets are manufactured.

Mr. Daniels succeeds R. K. Mangan, president and general manager, Buda Division, who has retired. He joined the Buda Company as vice-president in 1950 after a long career in the automotive industry with truck, bus, tractor and material handling companies. When Allis-Chalmers acquired the Buda Company in 1953, he continued to be responsible for the material handling, industrial and railroad products of the company.

L. C. Daniels

O. J. Higgins

Mr. Higgins started with the Monarch Tractor Co., Springfield, Ill., in 1926. This company was acquired by Allis-Chalmers in 1928 and became its Springfield Works where crawler tractors and allied equipment and motor graders are manufactured. He was transferred to the company's harvesting machine plant at La Porte, Ind., as assistant works manager in 1943 and promoted to assistant general works manager of the Tractor Group in 1950 with headquarters in Milwaukee.

St. Regis Paper Company, New York, N. Y., announces that DR. KENNETH A. ARNOLD, technical director of the central technical department, has been transferred to the New York office. Dr. Arnold was previously located at the central technical department headquarters located in Deferiet, New York. The department will continue its research and development work at Deferiet.

Dr. Arnold joined St. Regis in 1945 as research director of the Multiwall Packaging Division. In 1951, the central laboratories of the different St. Regis divisions were consolidated in Deferiet and Dr. Arnold was appointed technical director.

Independent Survey Proves...

WAGNER TRACTOR LOADERS OUTPERFORM ALL OTHERS!

In a recently completed survey, conducted by an independent research organization among tractor loader owners and operators, Wagner Tractor Loaders were preferred for performance.

Here, in the words of actual owners and operators, was overwhelming proof that for reliability and versatility you just can't beat Wagner Tractor Loaders and attachments.

Other reasons given for the purchase of Wagner Tractor Equipment were rugged construction, more maneuverability, fewer maintenance problems. All of which add up to one thing — if you've got a big, tough, bulk material handling job to do, see your Wagner dealer for a demonstration. He'll show you a plus value — an array of quickly-interchangeable Wagner attachments that transform a tractor into the most versatile equipment around the yard or quarry.

wagner
TRACTOR EQUIPMENT

WAGNER IRON WORKS, 1905 South 1st St., Milwaukee 1, Wis. Dept. 68

Please send me complete details about Wagner Tractor Equipment.

NAME .....

COMPANY .....

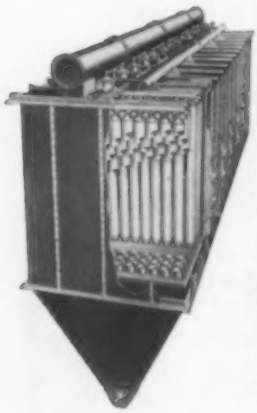
ADDRESS .....

CITY ..... STATE .....

"WAGNER BUILT" MEANS "BETTER BUILT" FOR OVER 105 YEARS

That's the guarantee you get with **Norblo** Automatic Bag Type Arresters

By "constant" we mean what operating men *expect* it to mean when applied to dust collection — *no* loss of suction drop, *no* down time, *no* variation in capacity.



Norblo's unit compartment system, with automatically controlled progressive and cyclic bag cleaning maintains the full capacity for which the particular installation is engineered. Bag cleaning is easily regulated if dust loading rate should change. Only one compartment is cut out at a time for cleaning (and that for only a few seconds) by means of moderate shaking which insures long bag life. A small quantity of reverse air is used to prevent unwanted dust flow during shaking operation. Excess dust is dropped without destroying the desirable basic filter cake.

Profitable, consistent performance of Norblo automatic dust and fume collection equipment is demonstrated in hundreds of important installations. If you need this facility for production, for salvage, or for good housekeeping, ask Norblo engineers what they can do for you. Write for Bulletin 164-4.

The Northern Blower Company

Engineered Dust Collection Systems for All Industries

6407 Barberton Ave. OLympic 1-1300 Cleveland 2, Ohio

CLAUDE L. HUEY has been appointed manager of the Atlanta District by Babcock & Wilcox Co., New York, N. Y. He succeeds Paul R. Yopp, who retired after serving as Atlanta District manager for 31 years.

Mr. Huey joined B&W as a student engineer at the former Bayonne, N. J. Works. He was transferred to the Barberton, O. Works the following year and worked in the production department and the process equipment division before returning to Atlanta as a sales engineer in 1934. During his long tenure in this position, he negotiated many large contracts for B&W throughout the district.

Mr. Yopp's retirement terminates the longest service period achieved by a B&W district manager or Atlanta District employee. He joined B&W in 1921 as a salesman in Atlanta, and was promoted to district manager in 1926.

C. L. Huey J. Pearcy

The appointment of JAMES PEARCY as manager of the St. Louis branch factory of Fruehauf Trailer Co., Detroit, Mich., has been announced.

Mr. Pearcy, who has been the sales manager in St. Louis for the last two years, has been associated with Fruehauf since World War II. He has served as a salesman at the Chicago branch and as product sales manager in the company headquarters.

Following the war, Mr. Pearcy played professional football for four years with the Chicago Rockets in the All America Conference and was associated with Fruehauf as a used trailer salesman at the Chicago branch.

LEWIS A. G. MARTORANO has been elected assistant treasurer of the Birdsboro Steel Foundry & Machine Company, Birdsboro, Pa. Before joining the company, he was a certified public accountant on the staff of Lybrand, Ross Bros. & Montgomery, Philadelphia.

LOOK TO DAYBROOK

. . . For a New Standard of Ruggedness on the "Rock Routine"!

The truck above was being backed to the edge of a quarry bank. The bank gave-way, causing the truck to roll end-over-end, coming to rest in an upside-down position. Within a few seconds after this picture was taken, the truck, equipped with a Daybrook Boulder Dam Style Dump Body, was righted and work resumed.

Daybrook Boulder Dam Style Dump Bodies feature sturdy wrap-around body construction—rounded inside corners for fast, clean dumping.

Daybrook Hoists are available in conventional arm, direct-lift, telescopic, and "Power-Up—Power-Down" models.

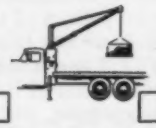
Daybrook builds a complete line of rugged hoists and bodies—well known for dependability in quarry operations.

Ask your distributor about Daybrook's built-in ruggedness on the "rock routine."

Daybrook Boulder Dam Style Body Model 1052 with Daybrook Speedlift Hoist Model 77-C-138.

SEND DAYBROOK LITERATURE CHECKED BELOW: 38

ROCK BODIES—HOISTS ☐



POWER LOADER ☐

EXCAVATOR BODIES—HOISTS ☐

POWER GATE ☐

Sign below, attach coupon to letterhead, and mail in envelope.

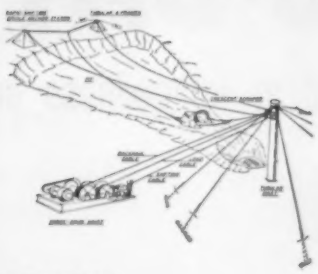
Name

DAYBROOK Speedlift® TRUCK EQUIPMENT

DAYBROOK HYDRAULIC DIVISION
L. A. YOUNG SPRING & WIRE CORPORATION
BOWLING GREEN, OHIO

LAYCO

Three Sauerman Methods for Cutting Excavating and Reclamation Costs



DIGGING and CONVEYING

Rapid Shifting DragScraper—Using a rapid shifting bridle system, a 4-cu. yd. DragScraper digs 200 cu. yds. per hour from an 80-acre gravel deposit. Rapid Shifter permits selection of desired sizes from various pit locations to obtain a proper mixture.

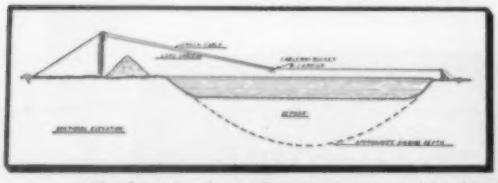
STORAGE and RECLAMATION

DragScraper—Clay reclamation from this 200-ft. storage shed is efficiently handled by a 1-cu. yd. DragScraper. From the controls of the Sauerman Hoist, the operator can reclaim to hopper from any part of the shed area. Winch at left provides power for lateral shifting of tail block and trolley on monorail.—*Sauerman News No. 140.*

UNDERWATER RECOVERY

Slackline Cableway—This cableway excavator is digging 50 ft. below water and delivering to a 60-ft. surge pile. Average haul is 600 ft. The slackline permits building a large stockpile due the height of discharge. (Drawing shows details of typical slackline installation.)

—*Sauerman News No. 141.*



Find out what the Sauerman Method can do for you

Give us details on your operation. Our engineers will give prompt recommendations and work with you to provide the best method for your requirements. Ask for Catalogs A (DragScrapers) and C (Slackline Cableways).

SAUERMAN BROS., INC. 634 SO. 28th AVE. BELLWOOD, ILL. Cable: CABEX—Bellwood, Ill

Crescent Scrapers • Slackline and Tautline Cableways • Duralite Blocks

DON L. DOUGLASS, formerly parts sales manager, has been appointed manager of the Thew Shovel Co., Lorain, Ohio, Parts Division in Elyria. He will assume the full responsibility and authority for all parts operations, including parts sales. He replaces A. W. Wagner, who had resigned as general parts division manager, having tentative plans for moving to the West Coast.

Since joining Thew in 1955, Mr. Douglass had been parts sales manager, responsible for all matters pertaining to the sale and distribution of parts for Lorain power shovels and cranes through Thew's network of domestic and export distributor outlets. Before joining Thew, he was with the American Steel Dredge Co. of Fort Wayne, Ind., where he had served as vice-president in charge of distribution and service for Wayne cranes.

D. L. Douglass

R. G. Greer

RALPH G. GREER has been appointed manager of sales, Construction Equipment Division, International Harvester Company, Chicago, Ill., succeeding the late I. P. Payne, who died recently.

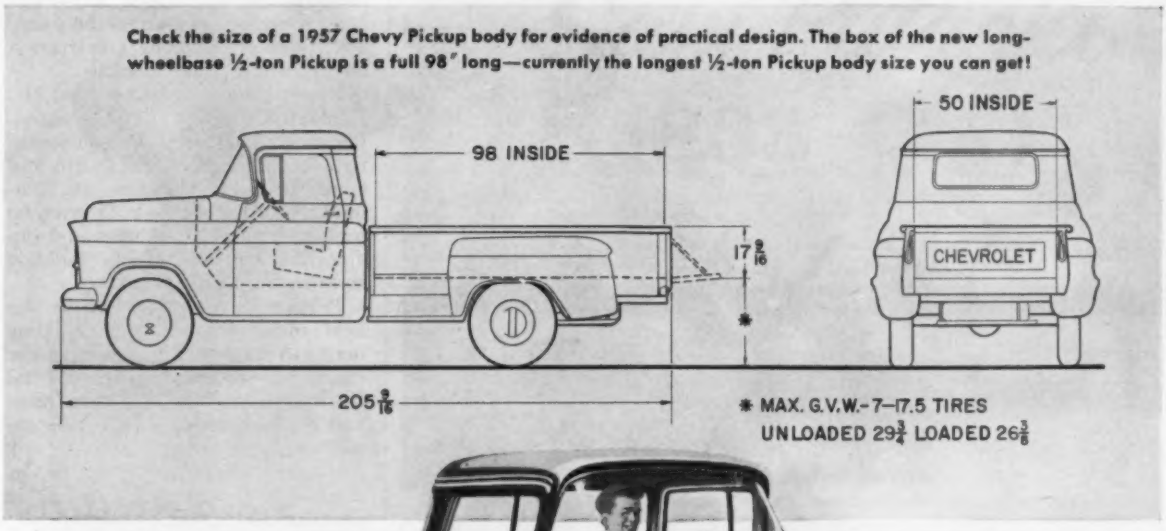
It was only in late 1956 that Mr. Greer joined the Construction Equipment Division after more than 23 years of service in various capacities in other company divisional operations.

LESLIE J. LANGE has been named assistant manager of sales, succeeding Mr. Greer.

V. P. REILLY, president of the Illinois Gear & Machine Co. of Chicago, Ill., announces the sale of all of the outstanding stock in that company to Hubbard and Company of Pittsburgh, Pa., and Chicago, Ill. There will be no changes in the management or policies of the company.

Illinois Gear was founded by Mr. Reilly in 1932 and is one of the leading manufacturers of industrial gears for every purpose. It was also announced that the company's expansion program has been stepped up. An additional new plant is being added to its South Works to accommodate new machinery.

Pick a practical pickup!


Check the size of a 1957 Chevy Pickup body for evidence of practical design. The box of the new long-wheelbase ½-ton Pickup is a full 98" long—currently the longest ½-ton Pickup body size you can get!
98 INSIDE
50 INSIDE
17 9/16
CHEVROLET
205 9/16
* MAX. G.V.W.-7-17.5 TIRES
UNLOADED 29¾ LOADED 26⅜

This big built-for-work "box" makes CHEVY first choice in Pickups!

These best selling '57 Chevrolet Pick-ups are practical trucks in every respect. They offer modern power to keep your costs down low, modern looks to keep your prestige up high... and all these modern body advantages to help you make light work of tough jobs!

They're the most practical and profitable Pickups going! For example, they enable you to load more easily and quickly, thanks to *low* loading height and steel skid strips in the long-lasting hardwood floor. And for your bulkiest loads, stake pockets accommodate the addition of racks or side boards. Other modern advantages include extra hauling space provided by *outboard wheel housings* . . . a grain-tight tailgate with anti-rattle latch that strengthens the sides . . . and practical level-ledge side panels. Chevy gives you running boards, too, for convenient side loading. These new Pickups come in a wide range of ½-, ¾- and 1-ton models with spacious boxes ranging up to more than 9 feet in length. See your Chevrolet dealer for the one that suits your job. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

'57 CHEVROLET TASK·FORCE TRUCKS

PROVED ON THE ALCAN HIGHWAY . . . CHAMPS OF EVERY WEIGHT CLASS

CHEVROLET

"Our BANTAM averages 120 yds. per hr. loading sand and gravel from stockpile"

"Beats a bigger rig we own!"

Here's another case where the low-cost BANTAM outproduces a larger machine. Palmer Sand and Gravel Co. of Jackson, Mich., uses this BANTAM T-35 to load from scattered points around the pit. Equipped with ½-yd. rehandling bucket, the BANTAM loads a 5-yd. dump truck in 1½ to 2 minutes. With two 10-yd. trucks it loads out 450-500 yds. in less than 4 hours, averaging 120 yds. per hour! Commenting on performance, owner Ed Palmer says the BANTAM outstrips his bigger rig.

Regarding maintenance on BANTAMS, Ed Palmer says, "It just doesn't cost anything to run 'em." He now owns 3 BANTAMS—has been a user for 9 years. In all that time his only replacement cost has been one set of swing clutches and 3 sets of trunnion rollers. That's for all 3 machines!

If you're looking for big production at lower costs, look into the money-saving facts about BANTAMS right now. Use the handy coupon.

WORLD'S LARGEST PRODUCER OF
TRUCK CRANES AND EXCAVATORS

SCHIELD Bantam Co.

219 Park Street, Waverly, Iowa, U.S.A.

Please send details on BANTAMS for sand and gravel work with type of mounting checked below: RP-116

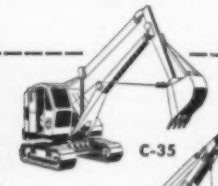
☐ Carrier ☐ Crawler ☐ Self-Propelled

Name.....

Company.....

Address.....

City..... State.....



C-35

CR-35

The appointment of J. R. JAMISON as vice-president in charge of sales of the Lambert Corp., Orlando, Fla., has been announced, following a program of accelerated expansion and growth of Lambert in the paint, waterproofing, building construction materials and allied markets.

In assuming his new position, Mr. Jamison will direct the sales activities of all Lambert field representatives in Florida, Georgia, North and South Carolina, Alabama, and Tennessee. During the past 15 years he has served in various sales and engineering capacities in the building construction industry.

Prior to this appointment, he was field engineer for a large building materials company and has extensive experience combined with a vast following among architects, engineers and construction firms in the Southeastern area. Mr. Jamison will maintain his headquarters in the Orlando plant offices of Lambert in Florida.

J. R. Jamison

J. W. Crandall

JOHN W. CRANDALL has been appointed district manager for the Mining, Crushing and Process Machinery Division by Nordberg Manufacturing Co., Milwaukee, Wis. His new headquarters will be in Duluth, Minnesota.

Mr. Crandall was formerly district manager of the North Central territory for Nordberg. He has many business friends and acquaintances throughout the mining and rock products industry and his family has been associated with the mining industry for many years.

OWEN R. RICE and FRED W. RYS have been given new assignments in the Engineering and Construction Division of Koppers Company, Inc., Pittsburgh, Pa.

Mr. Rice, a divisional vice-president who formerly was manager of the Freyn engineering department, has been named a special consultant to Dr. Rueckel, vice-president and general manager of the division. Mr. Rys has been named to succeed Mr. Rice as vice-president and manager of the Freyn department.

Sam Pulaski

(1833-)

Sam Pulaski is a wise old gent,
smart as any the Lord ever sent.
His job is the same day after day—
blasting down mountains the same old way.

But there's a story to this old guy
on why he'll use Austin 'til he die.
It started back before you and me,
as far back as eighteen thirty-three.

That was the year when Sam was the one
chosen to see the canal was done.
Canal was complete 'cept for a hill
bigger'n McKinley and steeper still.

Though Sam took the job he felt quite sad,
knew he needed more strength'n twenty had.
But Sam had heart and this was his tune,
"Get me some help and get it here soon."

As fate would be, Austin caught the cry
and filled his wagon near to the sky
with explosives aplenty, fuse galore
to trample trouble that lay before.

First went the mountain almost as fast
as Austin took to make up the blast.
Then boulders were made stones and stones sand
when Sam and Austin went through the land.

The canal was done in less'n a day
and still flows freely or so some say.
But this to Sam and his roughneck friend
was just the beginning, not the end.

To blast, to prime, to clip or to drill,
for every need Pulaski must fill
he's called on Austin since thirty-three,
quite a record I think you'll agree.

* * *

Now if you quarry or work a mine,
you must use products in our line.
So why not follow Sam's tested lead—
buy from Austin . . . everything you need.

USED IN 1833 AUSTIN EVER SINCE

AUSTIN POWDER COMPANY

CLEVELAND 13, OHIO

Big Star At
Lone Star...
Sly Dynaclone handles 13,800 c.f.m. in recovering dust from crushers, bucket elevators and the collecting end of the shuttle conveyor.

SLY DYNACLONE

Collects ALL the Crusher Dust

At Lone Star Cement Corporation, Bonner Springs (Kansas) plant, this Sly Dynaclone operates continuously to collect dust from all units in the crusher building. The salvaged material is automatically moved by screw conveyor from Dynaclone to storage. By keeping the building dust-free, the Dynaclone contributes to greater worker efficiency and reduced overall maintenance costs.

Three other Dynaclones at this plant also play a star role in cement saving. They reclaim cement dust from three silo groups and from the distribution systems that supply them.

Lone Star has nearly 200 Sly Dust Filter installations at its plants throughout the country. The reason: Sly Filters are designed to do a better job — with no appreciable maintenance — on all cement mill applications. Find out how they can do a better job for you . . .

SEND FOR BULLETINS 98 and 102

ALL-STAR DYNACLONE FEATURES

★ Constant suction at dust sources.

★ More cloth per foot of filter—efficient collection plus space-saving installation.

★ Self-cleaning for continuous efficiency. No auxiliary motors or blowers; the main operating fan does the cleaning.

SINCE 1874 SLY

THE W. W. SLY MANUFACTURING CO.

4745 TRAIN AVENUE • CLEVELAND 1, OHIO

OFFICES IN PRINCIPAL CITIES

Funeral services were held recently for ILEY P. PAYNE, manager of sales, construction equipment division, International Harvester Company, Chicago, Ill. Mr. Payne succumbed suddenly to a heart attack in his home in La Grange, Ill.

Mr. Payne joined the Harvester organization in 1924 at New Orleans. He served at that district office, Jacksonville, and Atlanta in several different capacities. In 1941 he was appointed assistant district manager at Atlanta and served in that capacity until May of 1943. In 1947 he was appointed district manager, farm equipment sales, at Houston.

In 1949 he was appointed assistant manager of farm equipment sales and held that position until 1953 when he was appointed manager of sales, construction equipment division.

Two distributors have been newly named to represent Pioneer Engineering Works, Inc., Minneapolis, Minn., Division of Poor and Company, Inc. They are the Anderson Equipment Company, Inc. of Omaha, Nebr., and the Llewellyn Machinery Corporation of Miami, Fla.

Anderson Equipment Co. will handle the Pioneer line of aggregates producing, road-building and related equipment in all of Nebraska except the area west of and including the counties of Sheridan, Garden and Deuel; and in the Iowa counties west of and including Osceola, O'Brien, Cherokee, Sac, Carroll, Audubon, Cass, Adams and Taylor.

Llewellyn Machinery Corporation will represent Pioneer in that part of Florida south of the Georgia border and east of and including the counties of Gadsden, Liberty and Franklin.

JOHN H. MELVIN, State Geologist of Ohio since 1947, has been elected vice - president — operations of the Pennsylvania Drilling Co. of Pittsburgh, Penn.

The Boston Woven Hose & Rubber Co., Boston, Mass., Industrial Rubber Products manufacturer, is now occupying warehouse facilities at 1925 Blake Street in Denver, Colo. The new warehouse has been established to facilitate prompt service and delivery in the Mountain States area for Boston's complete lines of industrial hose, flat belting, packing, matting, stair treads, garden hose and tape. J. H. Steffensen, district manager, will supervise this new operation.

✓ happy balance between dependable performance and moderate cost

ROLLWAY STEEL CAGE ROLLER BEARINGS

Tru-Rol *precision, steel-cage, heavy-duty bearing with contoured guide lips assuring true right-line rolling, maintained roller alignment and thin oil film.*

● Rollway's *TRU-ROL* Steel-Cage Bearings afford wide latitude in balancing *dependable* performance, *long* life, and *high load* capacity against *moderate* cost. They rate high in any comparison on a cost-performance basis.

A choice of stamped steel retainers with contoured guide lips, or steel segmented retainers assure true rolling and an evenly distributed *thin* oil film — *big factors in reducing power losses and heating.*

"Crowned" Rollers Relieve End Stress

TRU-ROL offers the extra advantage of a finish-ground "crown" radius on the roller ends. That relieves high end-stress and insures uniform load distribution over the entire length of the roller. The result: *TRU-ROL* Steel Cage Bearings carry heavier loads over longer periods without excessive end-fatigue. They are less affected by slight misalignment or shaft deflection.

Investigate *TRU-ROL* Steel Cage Roller Bearings before selecting any bearing in the medium price range.

TYPE D

Rollway Metric Series Steel Cage Roller Bearings

● Rollway Metric Series Steel-Cage Bearings offer the greater load capacity of solid cylindrical rollers, plus the true right-line rolling of trunnion rollers turning in a rigid steel cage. There's no roller skew, no pinch out, no cam action. Design permits maximum bearing capacity . . . within small space . . . at moderate cost.

Let Rollway Help...

Our complete engineering and metallurgical services will gladly work with you on your problem. Simply write or wire any sales office. No cost. No obligation.

Rollway Bearing replacements are available through authorized distributors in principal cities. Consult your classified phone directory.

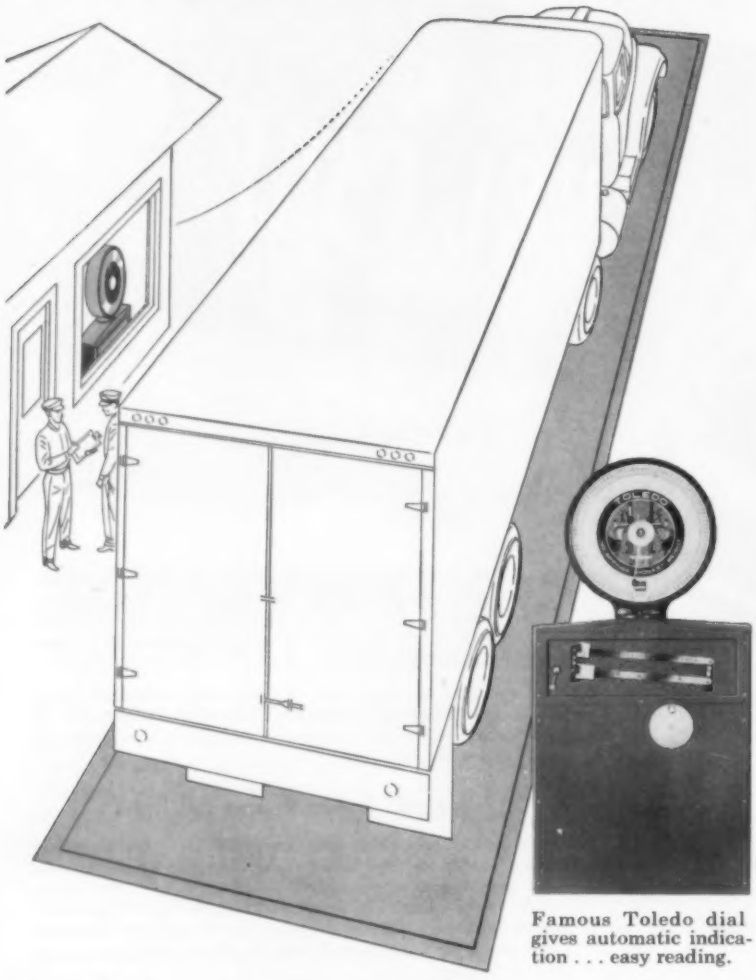
ROLLWAY BEARINGS

COMPLETE LINE OF RADIAL AND THRUST CYLINDRICAL ROLLER BEARINGS

ROLLWAY BEARING CO., INC. SYRACUSE, N.Y.

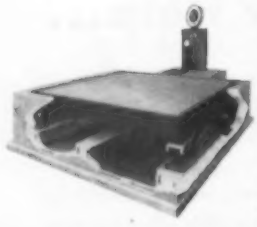
ENGINEERING OFFICES: Syracuse • Boston • Chicago • Detroit • Toronto • Pittsburgh • Cleveland • Milwaukee • Seattle • Houston • Philadelphia • Los Angeles • San Francisco

More and more trucks are weighed on TOLEDOS



Famous Toledo dial gives automatic indication . . . easy reading.

Big choice of sizes to 60 ft. . . . rugged dependability . . . automatic indication



HI-WEIGH AXLE LOAD SCALES
Check load distribution and axle weight. Thrifty shallow pit installation. 20 ton capacity with 8′ x 10′ platform or 30 ton with 10′ x 10′ platform.

Avoid loss of profits and good will, caused by "doubtful" weights. Weigh on Toledo Hi-Weigh Truck Scales and know *your load*. Advanced TOLEDO engineering features integrated lever, weigh-bridge and pit for brute-strength with long-life accuracy. Full range of capacities to 60 tons. Choice of two-section, four-section or axle load scales, all available with TOLEDO PRINTWEIGH that records weights on tickets, strips or sheets. Ask the local Toledo office about them, or send for literature. Request form 2417. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO®
Headquarters for Scales

Final consolidation of American Tractor Corp. into J. I. Case Co., Racine, Wis., has been completed. At a board meeting held recently, John T. Brown, chairman of the Case board, announced the election of MARC B. ROJTMAN, dynamic 39-year-old former president of American Tractor, to the newly created position of executive vice-president and general manager of J. I. Case. Mr. Rojtman will have authority over and responsibility for the overall operation of the newly merged company. In addition, he has been elected to the board of directors and will serve on the executive committee.

Two other members of the former American Tractor board, Mentor Kraus of Ft. Wayne, Ind., and Edward Elliott of New York City, have also been elected to the Case board.

Marc B. Rojtman

J. W. Trauernicht

The appointment of J. W. TRAUERNICHT as director of industrial relations, Fruehauf Trailer Co., Detroit, Mich., has been announced.

For the last three years Mr. Trauernicht served as industrial relations director for the firm of Baldwin, Lima and Hamilton, Philadelphia, fabricators of all types of heavy equipment from locomotives to road graders. Previously, he was director of industrial relations at Taylor-Wharton, and manager of labor relations, Eastern Division, for U. S. Steel.

GEORGE E. HAWKINS, vice-president of Air Reduction Co., Inc., New York, N. Y., has been elected executive vice-president of the company. He joined the company in 1917, has been vice-president since 1941, and a director since 1949.

The appointment of G. W. KELCH as president of Borg-Warner Corp's. recently acquired Ingersoll-Humphryes Division at Mansfield, Ohio, is announced. Mr. Kelch, who previously was executive vice-president of the Division, succeeds D. J. Jones in the presidency. Mr. Jones has been granted an indefinite leave of absence from Borg-Warner at his own request.

Proven quarry worker available

HAS FOUR-YARD SHOVEL . . . WILL TRAVEL

Will travel . . . there's the key to the real value of an Allis-Chalmers HD-21G tractor shovel. It not only digs and loads four yards at a pass, it is mobile enough to work in all parts of the pit . . . and flexible enough to do many different jobs well.

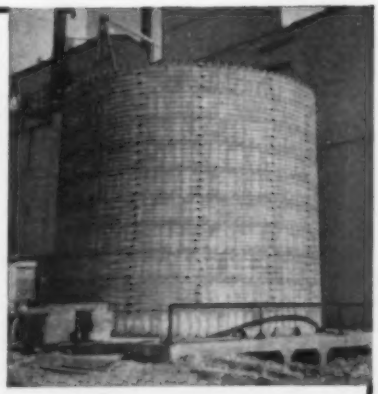
Besides loading trucks, the HD-21G can help maintain haul roads, carry material from quarry face to stockpile, feed or clean up around conveyors, or even travel out of the quarry to clear land for future operations.

Let your Allis-Chalmers dealer show you the many ways an HD-21G can work profitably for you. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS *Engineering in Action*

Shovel loads Rear-Dumps

Neff & Fry Bin Being Erected for Handling Silica Sand



When photographed, this Neff & Fry Super-Concrete Stave Bin was being erected for the Ottawa Silica Co., Ottawa, Ill. It is the first of two 28′ x 40′ bins which are now completed and in use. Silica sand is supplied principally to glass manufacturers, foundries, and concrete producers.

Through our experience in building thousands of bins, we have mastered the techniques of handling and storing virtually all kinds of flowable bulk materials. This knowledge is at your service upon request. You are invited to communicate with us.

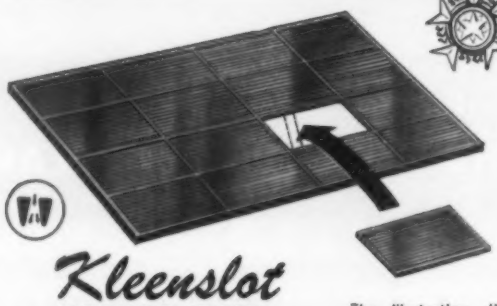
To understand the special advantages of our unique type of construction, ask for our folder, "Bins with the Strength of Pillars."

NOT EXPORTED EXCEPT TO CANADA AND MEXICO.

THE NEFF & FRY CO. • 278 Elm St., Camden, Ohio

NEFF & FRY SUPER-CONCRETE STAVE STORAGE BINS

For Distinguished Service



Kleenslot WEDGE WIRE PREPARATION SCREENS

On October 6, 1952 these Wedge Wire panels, as shown, were installed on a 6 x 16 Allis Chalmers low head vibrator. On April 30, 1955, after 7,836 hours of service they had processed 1,175,400 tons of 5″ x ¾″ coal, 1.36 float material. These screens are still in service and are proof positive of the long life of KLEENSLOT Wedge Wire Screens.

The illustration directly above shows the location of the test screen that was removed for checking. The dotted lines on the diagram show the point where the rinse water from two different rinse boxes hit the screens. Send for our completely illustrated catalog today.

Wedge-Wire CORPORATION

GAS STREET AT NICKLE PLATE R. R., WELLINGTON, OHIO

JAMES H. SUTHERLAND has been named director of sales and EDWARD H. WAGNER, midwestern regional sales manager, by SKF Industries, Inc., Philadelphia, Pa.

Mr. Sutherland has been associated with SKF in various sales and engineering capacities for over 13 years. He served successively as senior division engineer in Philadelphia, field engineer and then district manager in Pittsburgh, and later in the same capacity in Chicago, and most recently as midwestern regional sales manager. He will be located in Philadelphia.

Mr. Wagner, who has been manager of marketing, joined SKF more than 16 years ago and has served in a number of sales and sales-engineering positions, including those of field engineer in Pittsburgh and then as manager of industrial sales prior to becoming manager of marketing in 1955. In his new position, he will make his headquarters in Chicago.

Two new district representatives have been appointed by Pioneer Engineering, Division of Poor & Company, Inc., Minneapolis, Minn.

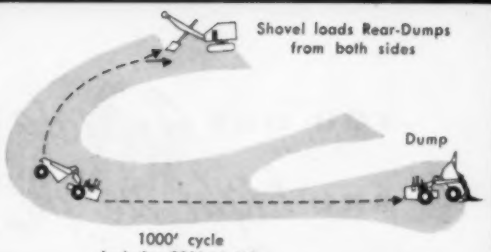
An engineering graduate in 1950, FRANK J. MCGIE will have as his territory Iowa, Kansas and Missouri, eastern and central Nebraska and southern Illinois. He has been employed by Pioneer in a sales engineering capacity since 1955, having previously been an engineer with the W. S. Nott Company, Minneapolis.

VERN SIEVERSON will represent Pioneer throughout Montana, Lemhi county in Idaho and the Canadian provinces of Alberta and Saskatchewan. A Pioneer employee since 1951, he has since had wide practical experience with Pioneer equipment in his capacity of field serviceman. Previous to that he held various positions in the aggregates producing and road-building fields, dealing primarily with production of washed and sized aggregates.

H. R. GODFREY JR. has been named as manager of product sales, West Allis centrifugal pump department, by Allis-Chalmers Manufacturing Co., Milwaukee, Wis. He joined Allis-Chalmers in 1948.

After completing the company's training course for graduate engineers, he became an assistant engineer in the centrifugal pump department. Two years later he was assigned to the New York district office. In 1956 he became assistant to the general manager of Allis-Chalmers General Products Division.

Haul heaped loads over slippery clay footing at Georgia Coating Clay Co. Pit



1000′ cycle
Includes 200′ of 6% uphill grade to dump

Within the year, Georgia Coating Clay Co. will produce 90,000 tons of kaolin at Pit #5 — one of their 5 mines in the Macon, Ga., area.

At this pit, 11 miles east of Macon, a 1½-yd. Koehring shovel and two 11-ton D Tournapull Rear-Dumps are stripping a 25′ layer of sand and red clay to expose rich kaolin deposits.

Hauls 7 yds. per load

Shovel operator heaped 7 yds. of overburden into Rear-Dump's wide (5′ 10½″) bowl in 1 min., 7 sec. Although rains made clay haul roads wet and sticky, each Rear-Dump consistently hauled heavy loads 500′ to dump site in average of 1 min., 24 sec. Haul included 200′ of 6% uphill grade out of the pit. On the dump, "D" backed in, spotted and dumped in 8 sec. Then, it pulled away and returned over same, slippery haul road to complete 1000′ cycle in average of 3 min., 49 sec.

According to Mine Supt. Frank Fountain, when clay road was dry, Tournapull Rear-Dumps cut cycle time to 3 minutes . . . increased production at the pit by one-third.

"Outstanding in rock"

Tournapull Rear-Dumps were moved to this tough stripping assignment, at Pit #5, after they profitably stripped 90′ overburden at Georgia Coating's other pits. Fountain said, "We were in trouble at this pit until we got these Rear-Dumps, and they brought us out. They did outstanding work in both tough rock and 'water sand'. I like 'em 'cause they're easy to maneuver under a shovel. They can pull themselves out of the soft dumps easy, too."

"D" scraper . . . valuable pit tool

Georgia Coating also uses a D Tournapull scraper on exploratory stripping operations. Besides stripping, versatile "D" loads, hauls and spreads sandy topsoil over the slick clay haul roads to speed hauling operations.

3 sizes; interchangeable work units

Tournapull Rear-Dumps are available in 3 sizes: 11, 22, and 35 tons. All can be interchanged with other trail units for year-round specialized work. Call or write for full specifications.

At a flip of a switch, operator activates electric switch to raise Rear-Dump body into dump position. Streamlined bowl sheds material fast. Note exposed kaolin in background.

Stripping 25′ overburden, shovel operator easily heaps good load into Tournapull Rear-Dump. Low rear-entry permits quick swing-out of empty dipper with door open.

D Tournapull scraper self-loads, hauls, and spreads topsoil over sticky roads to provide more traction for haulers . . . handles variety of pit jobs including exploratory mining.

Tournapull—Trademark Reg. U.S. Pat. Off. DRDP-1059-Q-b

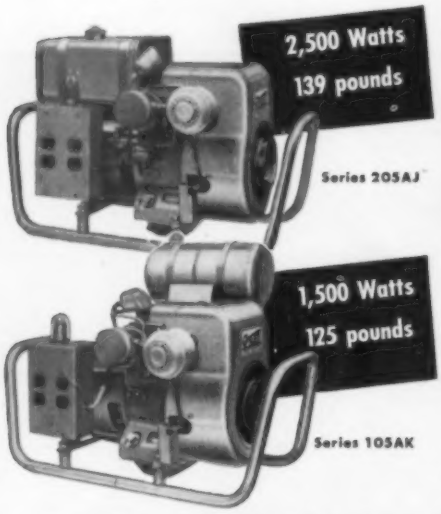
LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

WHERE QUALITY IS A HABIT

YOU GET *4-cycle* DEPENDABILITY
AND *Light weight* TOO . . . IN AN

ONAN Electric Plant



These power-packed electric plants give you all the *4-cycle* advantages of quick starting, long life and trouble-free operation . . . with an amazing weight saving over usual 4-cycle plants. You can carry them easily to any spot . . . and you can count on them delivering their full rated capacity as long as you need it. Both are single-cylinder, air-cooled . . . completely equipped and ready to go.

Other models to 75,000 watts.

Write for special folder on lightweight models!

D. W. ONAN & SONS INC.

Onan ELECTRIC PLANTS

3763 University Ave. S. E., Minneapolis 14, Minnesota

The Only Scales You Need

SCHAFFER Poidometers

for Handling Bulk Material

are a "perfect fit" in providing *reliable* weight-data at any processing stage.

They handle automatically the many functions of an overall scale, and with unmatched accuracy and speed.

Easily installed, Poidometers are long-service, high-economy machines. They keep production at top pitch, and preserve product uniformity. Available with total weight recorders, and remote controls for showing and changing feed rate.

They **WEIGH, BLEND, FEED, MIX RECORD, PROPORTION**

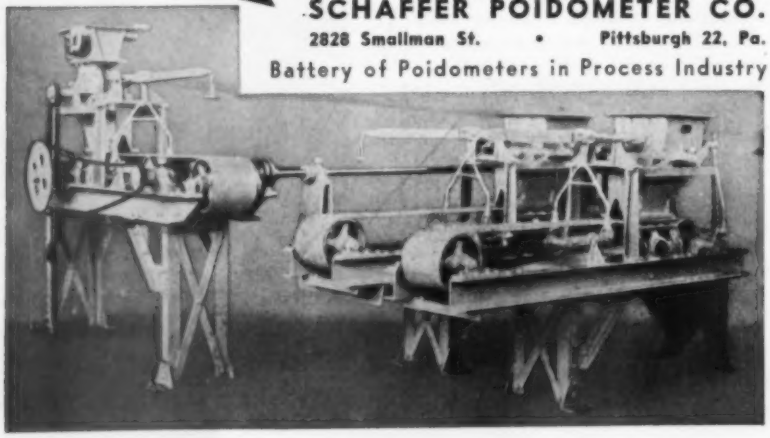
Over 1500 now serving Industry

Write for Catalog No. 5

SCHAFFER POIDOMETER CO.

2828 Smallman St. • Pittsburgh 22, Pa.

Battery of Poidometers in Process Industry



Reversing the trend of industrial firms to move from city to suburbs, the Thor Power Tool Co. has announced transfer of its executive offices from Aurora, Ill., to the Prudential Building in downtown Chicago.

All executive officers in management and sales, now headquartered in administrative offices at the Aurora plant, are involved in the move.

Thor Power Tool Company's expanding manufacturing facilities now include plants in Aurora, Cicero, Cincinnati, Los Angeles and Tynemouth, England. The Cicero division is a Thor subsidiary, the Speedway Manufacturing Company, which recently announced plans for a new $750,000 plant to be built in La Grange Park.

The company also is expanding its sales and service operations. Within the past year, it has opened new branches in three cities (Kansas City, Indianapolis and Richmond, Va.) and has moved to new, larger quarters in three other cities (Denver, Milwaukee and Detroit).

In order to better coordinate the production activities of its plants, the Bagpak Division of International Paper Co., New York, N. Y., announces the appointment of CHESTER B. MCCORD as manager of manufacturing and ASA MORGAN as assistant manager of manufacturing. Both men will make their headquarters at Camden, Ark.

Mr. McCord joined the Bagpak Division in 1934. He was made plant superintendent at Bastrop in 1948 and plant manager of all three plants in 1955. Mr. Morgan, a veteran of 24 years of service with the division, was superintendent of the Mobile plant prior to his new appointment.

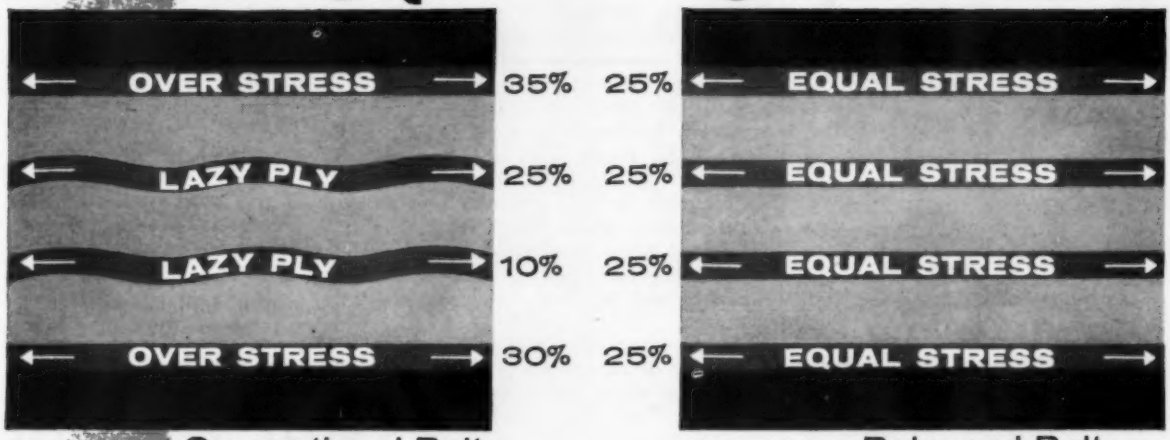
J. A. HORNE was named superintendent of the Mobile plant to replace Mr. Morgan.

ROBERT F. BOURNE, director of sales, national accounts, for The Colorado Fuel and Iron Corp., New York, N. Y., has moved his headquarters from Claymont, Dela., to the corporation's New York office.

The New York location will give Mr. Bourne more direct contact with CF&I customers in this area and in other parts of the country.

The recently completed $500,000 addition to the Rust-Oleum Corp. plant, located on twelve acres in suburban Evanston, Ill., marks the eighth company expansion project within the past ten years for the rust-preventive manufacturer.

Are you paying for "lazy plies" in your belts?



Conventional Belt Construction

Balanced Belt Construction

Balanced Belt Construction

Equalizes stress – prolongs belt life

BBC – Balanced Belt Construction – equalizes ply stress . . . *every* ply pulls its share of the load. You get trouble-free service . . . greater economy. BBC is a result of two remarkable BOSTON developments: *Electro-Tensile Control* and *Rotocure*. Electro-Tensile Control electronically controls stress in the plies during manufacture. Rotocure, the only continuous method of vulcanization, assures complete uniformity from end to end.

You cannot afford to underestimate the value and importance of Balanced Belt Construction. Your BOSTON man is ready to demonstrate how BBC prolongs belt life, minimizes downtime, saves you money!

BOSTON

BOSTON WOVEN HOSE & RUBBER CO.
BOSTON 3, MASSACHUSETTS

LUBRIPLATE No. 630-AA LUBRICATES ABOUT EVERYTHING

LUBRIPLATE No. 630-AA is practically a universal grease type lubricant. It was developed to meet industries' need for *"simplified lubrication"* . . . one lubricant to effectively satisfy a great number of requirements. LUBRIPLATE No. 630-AA has a smooth, stable consistency, a wide temperature range, possesses high film strength, fine adhesive properties and is water repellent. It satisfies most lubrication requirements, thus eliminates the need for a different lubricant for each application in many cases.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Write for free "LUBRIPLATE DATA BOOK". . . a valuable treatise on lubrication. LUBRIPLATE DIVISION, Fiske Brothers Refining Company, Newark 5, N. J. or Toledo 5, Ohio.

A modern two-story steel frame building containing approximately 10,000 square feet on each floor will be erected across from the main offices of The Timken Roller Bearing Co., Canton, Ohio. The building will house the company's physical, railroad research, electronic, photographic and lubrication laboratories. Earlier, The Timken Company announced the construction of a five hundred thousand dollar metallurgical research building which will be located just north of its Steel and Tube Division office building.

EMMETT H. MANN has been named vice-president and general manager, Leschen Wire Rope Division, H. K. Porter Company, Inc., New York, N. Y. Until his present appointment he held a similar post with the Alloy Metal Wire Division. He joined Alloy seven years ago as a sales engineer, became its sales manager and in 1956 its general manager.

At the same time announcement was made of an expansion program at Leschen which will be completed toward the end of this year. For the first time in its hundred years, Leschen will have its own wiredrawing equipment to integrate the production of wire rope. The wire to be manufactured will be of the same outstanding quality as all Leschen products. Delivery will be accelerated considerably and greater plant flexibility will be achieved.

The promotion of BARNEY L. CROWE to the position of manager of the newly-formed Charlotte, N. C. sales division of The General Tire & Rubber Co., Akron, Ohio, has been announced. In his new position, Mr. Crowe, formerly assistant division manager at Atlanta, will supervise sales of General tires, tubes, batteries, and related products in a tri-State area consisting of North and South Caroina and most of Virginia.

Appointment of JAMES H. BORING as Pittsburgh division manager has been announced by General. As head of the newly-formed division, Mr. Boring, formerly division manager at Richmond, Va., will direct sales in area of New York, Pennsylvania and Maryland. He has been with General Tire since 1947.

Also announced is the appointment of DONALD L. DEWING as director of quality control. In his new duties, Mr. Dewing will assume responsibility for quality control policies and procedures on a company-wide scale.

IT COSTS NO MORE — TO USE THE BEST

REPLACE WITH "Indian Brand"

MANGANESE STEEL
Shovel Dippers
Dipper Teeth
Shovel Treads

Crusher Jaw Plates
Mantles—Concaves
Bowl Liners
Roll Shells

Pulverizer Hammers
Grate Bars—Breaker Plates

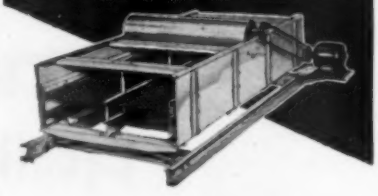
Ball Mill Liners
Screen Plates

The Frog, Switch & Mfg. Co. CARLISLE, PA.

ESTABLISHED 1881

UNIVERSAL

OFFERS THE BEST IN VIBRATING SCREENS AT THE LOWEST PRICE



Before you buy, be sure to get a copy of the new UNIVERSAL Catalog #1501

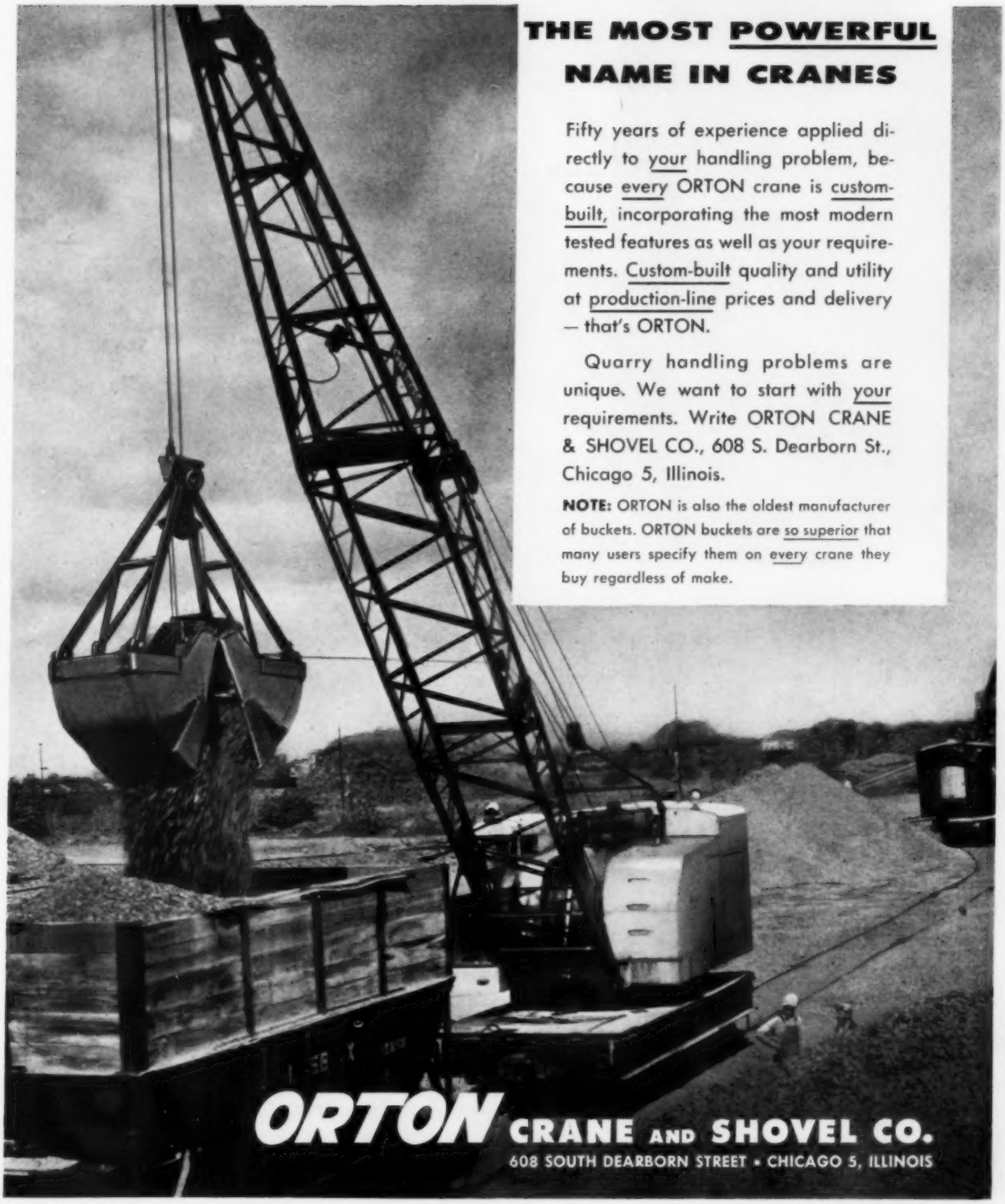
There's a model to fit your particular requirement, priced within the smallest budget.

Write today for free catalog #1501

UNIVERSAL VIBRATING SCREEN CO.

Racine, Wisconsin
Quality Screens Since 1919

ORTON



THE MOST POWERFUL NAME IN CRANES

Fifty years of experience applied directly to your handling problem, because every ORTON crane is custom-built, incorporating the most modern tested features as well as your requirements. Custom-built quality and utility at production-line prices and delivery — that's ORTON.

Quarry handling problems are unique. We want to start with your requirements. Write ORTON CRANE & SHOVEL CO., 608 S. Dearborn St., Chicago 5, Illinois.

NOTE: ORTON is also the oldest manufacturer of buckets. ORTON buckets are so superior that many users specify them on every crane they buy regardless of make.

ORTON CRANE AND SHOVEL CO.
608 SOUTH DEARBORN STREET • CHICAGO 5, ILLINOIS

7-Ton GIW Ni-Hard drop ball, produced by Georgia Iron Works Co., Augusta, Ga., gave outstanding service in secondary fragmentation of hard rock in granite quarry. Check the facts in caption at right.

The user, Consolidated Quarries, wore down a 12,000-pound forged steel ball to 5,000 pounds in six months, a loss of 7,000 pounds. In the same amount of time, the quarry's 14,000-pound GIW Ni-Hard ball lost only 1,880 pounds, a solid demonstration of the durability and economy of Ni-Hard iron. View shows Ni-Hard drop ball in the Consolidated quarry, Lithonia, Georgia, where some 1,000,000 tons of crushed granite are turned out each year.

4 to 1 longer life crushing granite! Ni-Hard ball outperforms forged steel

Four times the life means a big reduction in costs for rock crushing.

The user, Consolidated Quarries, compared the life of this GIW Ni-Hard* drop ball with a forged steel ball. Both working side-by-side in a Georgia granite quarry. Crushing unusually hard rock . . . comprising 60% feldspar and 35% quartz.

Why do Ni-Hard drop balls and skull crackers outperform those of other materials?

Primarily, because Ni-Hard balls retain their working weight longer. They keep right on working because this nickel-chromium white iron combines needed wear resistance with ability to take the shock of jolts against quarry rock.

Specify your next drop ball in this economical, abrasion-resisting iron. See how it stays on the job smashing hard rock and saving hard cash. Georgia Iron Works Co., Augusta, Georgia, is an authorized producer of Ni-Hard drop balls and other Ni-Hard castings in all common forms and shapes.

*Registered trademark

INCO TRADE MARK **THE INTERNATIONAL NICKEL COMPANY, INC.** 67 Wall Street New York 5, N. Y.

WIRE ROPE AT WORK

This picture graphically illustrates the tremendous role of the dragline excavator in surface mining. The workhorse you see here, scooping up big bites of overburden, seems to be digging a canyon while at the same time creating a small mountain range. It is owned by J. Robert Bazley Inc., a stripping contractor well known for his work in the coal fields of Eastern Pennsylvania.

Wire rope plays a particularly important part in the operation of a dragline machine. In this case, the owner made sure of long rope life by rigging with Bethlehem lines throughout. Ropes of three sizes were involved: 1⅞-in. diam for the drag, 1⅜ for the hoist, 1¼ for the boom. All were Purple Strand Form-Set, Bethlehem's top-grade preformed; and all had independent wire-rope core to protect against crushing.

Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

Mill depots and distributors from coast to coast stock Bethlehem rope for the following industries and numerous others:

MINING • QUARRYING • CONSTRUCTION • EXCAVATING • PETROLEUM • LOGGING • MANUFACTURING

DART 10SL . . . Standard 10 tonner with submerged arc-welded box girder frame. 150 HP diesel driving through a double reduction rear axle. Tires are 12:00 x 20 all around. (Optional hydraulic steering, turbo charged engine and torque converter.)

SOLVE YOUR HAULAGE PROBLEMS with DART HEAVY-DUTY TRUCKS

In over 50 years of heavy-duty truck manufacturing experience, Dart has been a consistent leader in major truck design improvements. Designing trucks to meet specific haulage requirements is a Dart specialty... may we help *you* with your problems? No obligation.

STANDARD AND CUSTOM TRUCKS
10 TO 55 TON CAPACITIES
SINCE 1903

DART TONNAGE ENGINEERED TRUCKS
Kansas City 8, Missouri
SUBSIDIARY OF THE CARLISLE CORPORATION

DART 25SL . . . Standard 25 tonner known throughout the world for its rugged construction and dependability. 300 to 335 diesel driving through single or three stage converters and Dart's famous triple reduction rear axle.

D-126

NOW It's A FLEET OF 31 TRACTOMOTIVE TL-12 TRACTO-LOADERS

Sold By E. F. Craven Co., Greensboro, N. C.

for the North Carolina State Highway & Public Works Commission

Helping to keep the roads of North Carolina in top shape is the job of a fleet of TL-12 Tracto-Loaders — 31 in all!

"We like their all-round ability," says the North Carolina State Highway Maintenance Department. The TL-12's load crushed stone, sand, gravel or topsoil as needed. Pick up and load excess material pulled from slopes and ditches. Handle general utility work — such as loading pipe and drums of oil.

You not only get your money's worth from the TL-12's ability to do many jobs well . . . you save money on every job because these 1⅛-yd excavator-loaders work faster, and there's less maintenance.

Every load is a big load with the tip-back bucket and smooth, positive hydraulic torque converter drive. And you go forward or reverse simply by pulling or pushing a lever — no shifting. You place material right in the center of the truck, too — no tires protruding ahead of cowl to rob you of valuable reach . . . no wasting time leveling load.

And here are real trouble-savers! Dump cylinders are out of the way and out of the dirt. Hydraulic system has double filter protection with both screen and magnetic filters.

But get the full story from your Allis-Chalmers construction machinery dealer. Let him show you why

TRACTO is a sure sign of modern design

SOLD AND SERVICED BY YOUR ALLIS-CHALMERS CONSTRUCTION MACHINERY DEALER

Send For Free Descriptive Catalog On The Complete Line Of Tracto-Loaders

TRACTOMOTIVE

TRACTOMOTIVE CORPORATION • DEERFIELD, ILLINOIS

TRACTOMOTIVE CORPORATION, Dept. PQ
Deerfield, Illinois

☐ Please send Tracto-Loader Catalog
☐ Have salesman call

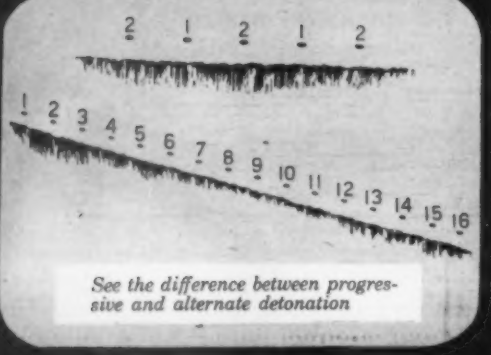
Name .....
Title .....
Company .....
Address .....
City ..... State .....

TO HELP YOU BLAST WITH GREATER ECONOMY

The INSIDE STORY

See how modern blasting methods improve breakage

See how the point of initiation affects rock movements...controls throw



See the difference between progressive and alternate detonation

Don't miss this movie for men who use explosives in Quarries, Strippings and Construction!

Here is a motion picture that gives the facts on modern blasting techniques. It shows how you can save money through better, more complete fragmentation . . . how you can increase safety by eliminating the need for secondary blasting . . . and how your public relations can be improved by holding noise and vibration to a minimum.

"*The Inside Story*" is prepared by Atlas Powder Company as a technical service. Show it to your organization for a better understanding of scientific blasting. It explains in detail how the point of initiation affects blasting results . . . how millisecond delay techniques and alternate velocity loading are used to gain maximum efficiency.

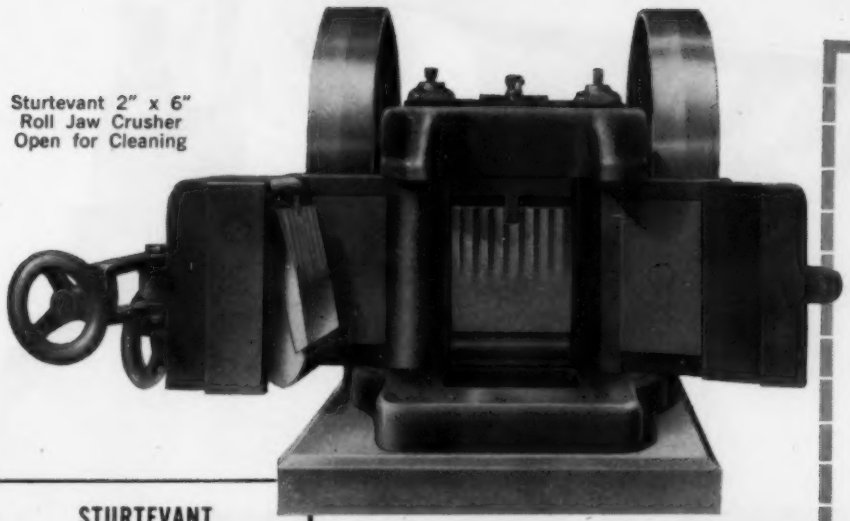
This information also makes "*The Inside Story*" well suited for showing at institute meetings and to other engineering groups.

How to get the film. Simply write us on your letterhead, telling us at what type of meeting you'd like to show "*The Inside Story,*" and approximately when you'll need it. We'll try to ship a print to you well in advance of the date you select.

Ask also about other Atlas educational material such as the films, "*How to Handle Women and Explosives*" (for your safety meetings), and "*We're Blasting Near You*" (to show to your neighbors). And write for "*Better Blasting,*" the informative Atlas newsletter on latest blasting materials and methods.

EXPLOSIVES DIVISION
ATLAS POWDER COMPANY
WILMINGTON 99, DELAWARE
offices in principal cities

"OPEN-DOOR" DESIGN CUTS SAMPLING TIME



Sturtevant 2" x 6" Roll Jaw Crusher Open for Cleaning

STURTEVANT LABORATORY EQUIPMENT

ROLL JAW CRUSHER

First choice for hard rocks. Jaw opening — 2 x 6 in. Approx. capacity: ⅛ in. setting — 700 to 800 lbs. per hr.; ¼ in. setting — 1000 to 1200 lbs. per hr.

CRUSHING ROLLS

Two sizes: 8 x 5 and 12 x 12. Outputs range from ¾ in. to 20 mesh at capacities from ¼ to 10 tons per hr. Performance varies with materials.

SWING-SLEDGE MILLS

For pulverizing soft, hard, tough or fibrous materials ranging from 1 in. to 20 mesh. Feed opening — 5 x 6 in. Capacities at 250 lbs. to 1 ton per hr. for 10 mesh, depending on materials.

SAMPLE GRINDER

Produces samples between 10 and 100 mesh with simple handwheel adjustments. Capacity up to 200 lbs. per hr. with ¼ in. or finer feed.

Small-Scale Duplication of Full-Scale Production

All Sturtevant Laboratory Equipment is ruggedly constructed. So much so that it is used in regular plants for round-the-clock operations. Exclusive "Open-Door" design makes cleaning and maintenance between sample runs quick and easy.

Preferred by laboratories that are proud of their work. Users of Sturtevant Laboratory Equipment represent the "blue chips" in industry and education. Names on request. Check the coupon for full information.

STURTEVANT

Dry Processing Equipment

The "OPEN DOOR" to *lower* operating costs over *more* years

CRUSHERS • GRINDERS • MICRON-GRINDERS • SEPARATORS
BLENDERS • GRANULATORS • CONVEYORS • ELEVATORS

My dry-process materials are: _____

Desired capacity is: _____

Name _____ Title _____

Firm _____

Street _____

City _____ Zone _____ State _____

STURTEVANT MILL COMPANY, 104 Clayton Street, Boston 22, Mass.

Please send me your bulletin on Laboratory Equipment ☐

Also bulletins on machines for:

☐ CRUSHING ☐ GRINDING ☐ PULVERIZING
☐ MICRON-GRINDING ☐ SEPARATING ☐ BLENDING
☐ SUPERFINE SELECTING ☐ GRANULATING ☐ CONVEYING

in its own element...

THE OLIVER HORIZONTAL FILTER

dewatering silica sand

Dewatering high tonnages of high quality glass sand is a natural application for this Oliver Horizontal Filter recently installed at a west coast sand plant.

The pre-treated sand flows into the Filter, is dewatered, and then a slime removing reagent is introduced to aid in further reduction of moisture content. Vacuum is shut off at the end of cycle and the sand is discharged by means of a scroll into a hopper for conveyance to final drying. Operation is fully automatic with every step visible and accessible through the entire cycle.

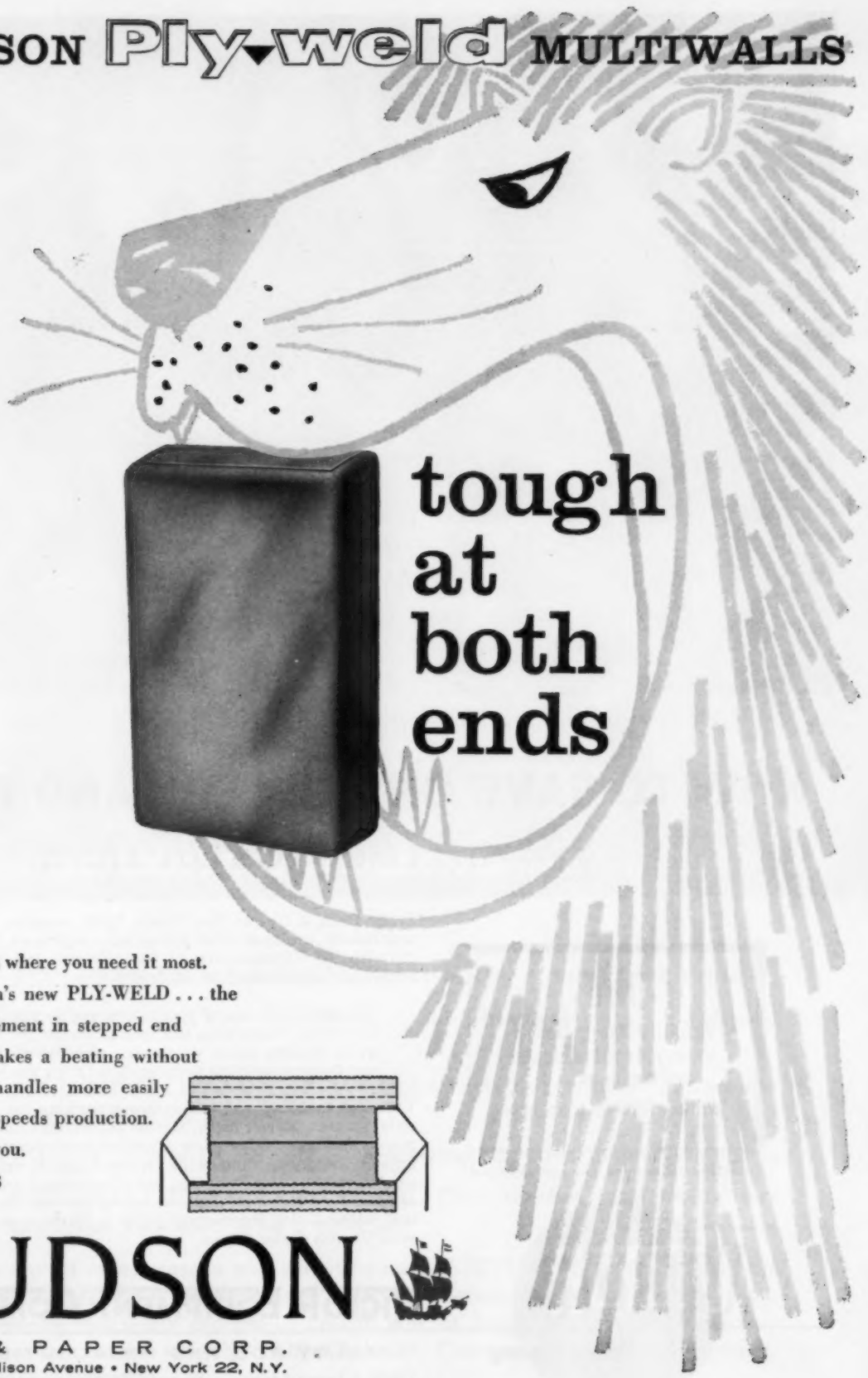
An interesting side light of this installation is that clay tailings from the sand recovery operation are removed to a 275′ dia. Dorr Thickener for water reclamation. Clay fraction is pumped to a nearby processing plant for further refining.

This typical installation is but another example of Dorr-Oliver ability to provide the right equipment for the job.

If you would like more information on the Oliver Horizontal Filter, just drop a note to Dorr-Oliver Incorporated, Stamford, Conn. Ask for Bulletin No. 7201.

DORR-OLIVER
INCORPORATED
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT
STAMFORD • CONNECTICUT • U.S.A.

HUDSON Ply-weld MULTIWALLS



tough at both ends

Extra strength where you need it most. That's Hudson's new PLY-WELD . . . the latest improvement in stepped end Multiwalls. Takes a beating without breaking . . . handles more easily at the spout, speeds production. Let us show you. Write Dept. 63

HUDSON

PULP & PAPER CORP.
477 Madison Avenue • New York 22, N.Y.

Plants at PINE BLUFF, ARK. • PALATKA, FLA. • WELLSBURG, W. VA.

This roller, hardfaced with Victoralloy, shows practically no wear after crushing 40 tons of rock hourly, 8 hours daily for 30 days.

HOW TO SAVE ON ROLLERS AND ROD

....*Use VICTOR Hardfacing*

• FREE •
Victor Hardfacing Manual shows you right rod to use and how to apply it.
Write us NOW for your copy.

Profitable dealerships open; inquire now!

Tracy Rock & Gravel Co., Tracy, Calif., crushes 40 tons of rock hourly, prolongs roller life on this rough work by rebuilding with ¼" VICTORALLOY #1 Bare Electric rod, 28" length. Says plant superintendent Albert Parker:

> "Victoralloy's ease of application and fast buildup mean a lot to us. There is no lost time as we use 28" length rod; when it burns down, we touch a new rod to the old one, and keep on welding without even lifting the helmet."

You, too, can save rod and increase working life of crusher rolls, screens, shovel teeth, tractor rollers and idlers, dredge pumps and many other parts subjected to abrasion and severe impact. Simply hardface with VICTORALLOY. It welds to manganese, steel or cast iron. You get all position hardfacing, exceptional arc stability, deposits free of porosity, fast application without slag interference. Try it. Order a supply from your VICTOR dealer TODAY.

37

VICTOR for hardfacing

VICTOR EQUIPMENT COMPANY

ALLOY ROD AND METAL DIVISION

13808 E. Imperial Highway, Norwalk, Calif. • Wakita, Oklahoma

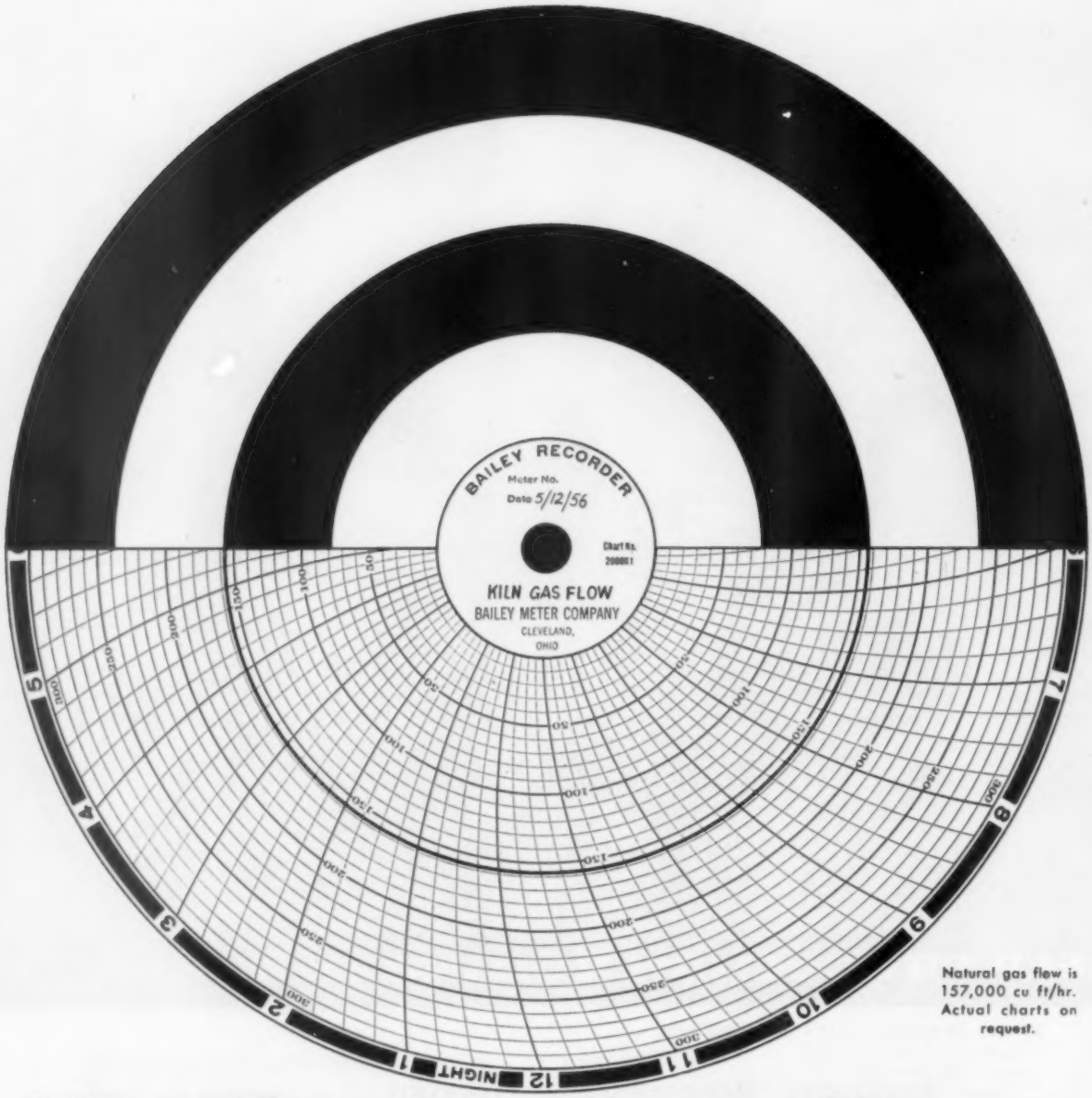
KEEP PRODUCTION ROLLING *with help like this . . .*

- **EXCLUSIVE "ROLL-AWAY" MOLDBOARD . . . moves tough dirt fast**
- **NEW TOGGLE-TYPE CONTROL . . . kick-free in the rough . . . pinpoint accuracy**
- **HIGHEST AXLE AND THROAT CLEARANCE in its class . . . for better handling of biggest loads**
- **TOUGH TUBULAR FRAME . . . shock-absorbing strength down the middle**
- **BOX-SEAT COMFORT AND VISIBILITY . . . satisfied operators . . . more and better work done on all grading jobs**

ROLL-AWAY is an Allis-Chalmers trademark

These are five of many reasons why Allis-Chalmers FORTY FIVE motor graders are showing up in more and more mining and quarrying operations. They are precisely what the dirt-moving specialists ordered . . . ready now to handle haul road construction and maintenance easily, smoothly. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS *Engineering in Action*



Natural gas flow is 157,000 cu ft/hr. Actual charts on request.

More Cement—Fewer Upsets

with bull's-eye performance

• Bailey Automatic Kiln Control keeps your kiln at peak performance for days at a time with little or no supervision. The necessary know-how for the proper selection and application of instruments and controls by Bailey Engineers has been derived from experience, tests, and successful installations. Kiln temperatures, feed, draft, fuel, and speed are kept "in the groove" at maximum kiln capacity. Recorders show burner operators visual evidence of *bull's-eye* performance.

Let one of our application engineers help you plan for *bull's-eye* operation. Write for KILN CONTROL FOLDER complete with case histories and charts. C-10

Instruments and controls for power and process

BAILEY METER COMPANY

1051 IVANHOE ROAD • CLEVELAND 10, OHIO

In Canada—Bailey Meter Company Limited, Montreal

BAILEY METERS

LIMA

SHOVELS - DRAGLINES AND CLAMSHELLS

are geared to quarry and pit conditions

Down time in digging operations is costly—not only because of difficult on-the-job maintenance—but because down time of machines ties up costly labor and idles other expensive equipment. Lima shovels and draglines, with "built-in" stamina for the tough jobs, pay big dividends by assuring continuous operation with maximum output at lowest cost.

Painstaking care in every step of manufacture assures the quality of every part, long trouble-free service of every Lima machine. You'll be able to put a Lima to work and keep it working day in and day out with only routine maintenance.

Get complete details from your nearby LIMA distributor . . . or write Construction Equipment Division, Baldwin-Lima-Hamilton Corporation, Lima, Ohio.

COMPARE QUALITY! No other machine gives you as much as **LIMA!**

1. Piston-ring-type dirt seal rings and retainers.
2. Moving parts are flame or induction hardened for longer life.
3. Main machinery is placed well back of center of rotation.
4. Anti-friction bearings at all important bearing points.
5. Big capacity drums and sheaves are easy on cables.
6. Propel and swing gears and power take-off are enclosed in a sealed oil bath.
7. Torque converter (optional on certain types).
8. Wherever you are, you can depend on skilled service and nearby warehouse stocks of parts.

These are only a few of the features which help you *strip more, dig more* and *load more* with a LIMA. There's a type and size for every job—shovels to 6 yds., cranes to 110 tons and draglines variable. Smaller capacities on rubber.

DISTRIBUTORS IN PRINCIPAL CITIES OF THE WORLD

LIMA SHOVELS · CRANES · DRAGLINES · PULLSHOVELS

BALDWIN-LIMA-HAMILTON

Construction Equipment Division · LIMA · OHIO · U. S. A.

SMIDTH
cement coolers

The Smidth Cement Cooler, developed especially for cooling hot cement to temperatures acceptable for bulk shipment or immediate bagging, is externally water-cooled. The hot cement is introduced at the base and conveyed in a thin layer along the cooled interior surface to the top, where it is discharged. High cooling efficiency is assured by the intimate contact of cement and the water-cooled surface.

The Smidth Cooler may also be used with many other similar dry pulverized materials.

Illustrated here are two 6' 6" dia. x 17' 7" high Smidth Coolers ready for shipment.

F. L. Smidth & Co.
Engineers and Machinery Manufacturers
11 West 42nd Street
New York 36, N. Y.

F. L. Smidth & Co., A/S
77 Vigerslev Alle
Copenhagen, Denmark

F. L. Smidth & Cie France
80 Rue Taitbout
Paris (9e) France

F. L. Smidth & Co. of Canada, Ltd.
11 West 42nd Street
New York 36, N. Y.

F. L. Smidth & Co., Ltd.,
105, Piccadilly,
London, W. 1, England

F. L. Smidth & Co. (Bombay) Private Ltd.
42 Queen's Road
Bombay, India

EXTRA-TOUGH going calls for extra-tough AMSCO® DIPPERS...with Renewable Lip

On the Iron Range and in the Copper Mines, demands on dippers are really tough. And that's where Amsco Manganese Steel Dippers have proved they can "take it"... in years of rough use.

Amsco *Renewable Lip* Dippers are particular favorites here. For when the lip eventually wears out, this easily changed unit cuts "repair-time" to *one-tenth* that required for change-over of conventional designs.

The lip sides overlap and fit snugly into sockets in the back casting. Lugs on lip fit into slots in front casting and are secured by forged, split keys. Sturdy U-bolts fasten lip to back casting, pulling it tightly to dipper when double nuts are screwed down. The result is one-piece rigidity and strength, free of play in any direction.

You save two ways: first, through the extra-long service life of Amsco Manganese Steel Dippers; second, through quick and easy replacement of the Renewable Lip.

See your shovel manufacturer for full information on Amsco Dippers, or write us direct.

AMERICAN Brake Shoe COMPANY

AMSCO

American Manganese Steel Division • Chicago Heights, Ill.

OTHER PLANTS IN: DENVER, LOS ANGELES, NEW CASTLE, DELAWARE, OAKLAND, ST. LOUIS; JOLIETTE, QUEBEC

THIS ARMCO PIPE CARRIES 1,000 TONS OF MATERIAL AN HOUR

Armco 20-inch-diameter Pipe discharges onto a desanding table.

Dredges with 20-inch-diameter Armco Pipe discharge lines handle 1,000 tons of material per hour at American Aggregates Corporation's Green Oak, Michigan, plant.

Dredging operation uses 20-inch-diameter Armco Pipe

American Aggregates Corporation, at its Green Oak, Michigan, plant, uses 20-inch-diameter Armco Special Analysis Steel Pipe to carry material from the large dredges to the desanding tables. The rate is 1,000 tons an hour. Annual production capacity of this plant exceeds 2,500,000 tons.

Ordinary pipe would quickly wear out under this high volume of flow. But Armco Special Analysis Steel Pipe stubbornly resists abrasion. In addition, Armco Pipe provides high resistance to pressures and impacts.

Armco Pipe can be supplied with machine-reduced or expanded ends. Pipe ends can also be flanged or prepared for special couplings or welding. Other special end finishes are available. Diameters range from 6 to 36 inches; wall thicknesses from $\frac{9}{64}$- to $\frac{1}{2}$-inch.

Use Armco Pipe to save time, trouble, and money in phosphate mining, dredging, slurry recovery, and similar operations. Write us for information applied to your specific needs. Armco Drainage & Metal Products, Inc., Welded Pipe Sales Division, 3907 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation.

ARMCO SPECIAL ANALYSIS STEEL PIPE

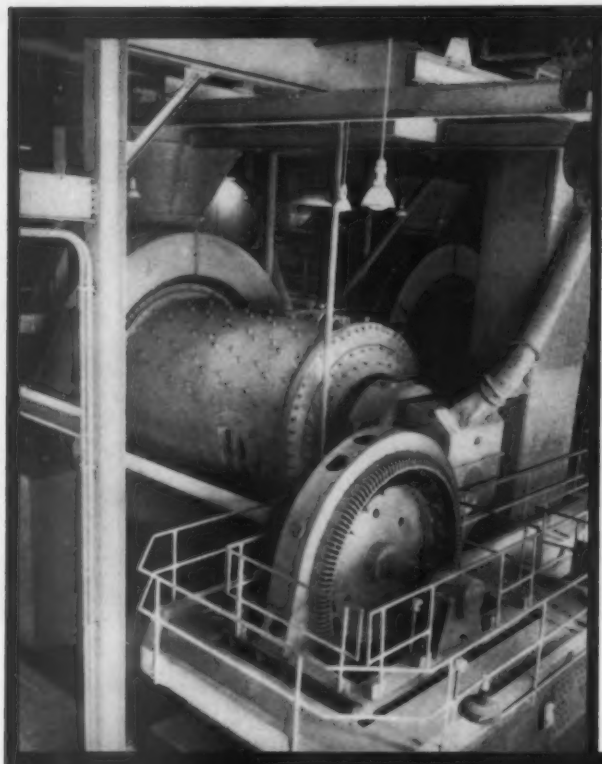
Loading Limestone for New York Cement Plant

Production of Portland cement starts here, with the limestone dug out by a Marion 101-M. The shovel has a 3-yard dipper and is powered by electricity.

CONSULT MARION MINING SPECIALISTS
for lowest costs on your property!

MARION POWER SHOVEL COMPANY • MARION, OHIO

The Bowling Champ
buys a custom-made ball
because he gets
something **EXTRA**



the profit-wise operator

BUYS TRAYLOR BALL MILLS for the same reason

Leading producers rely on the proven features of Traylor-made Mills to achieve EXTRA production efficiency and lower operating costs.

Available in sizes to meet practically every requirement, Traylor Grinding Mills are offered in a wide variety of types including: Ball, Rod, Compartment and Tube Mills for wet or dry . . . coarse or fine grinding. Write for Bulletin No. 11-121.

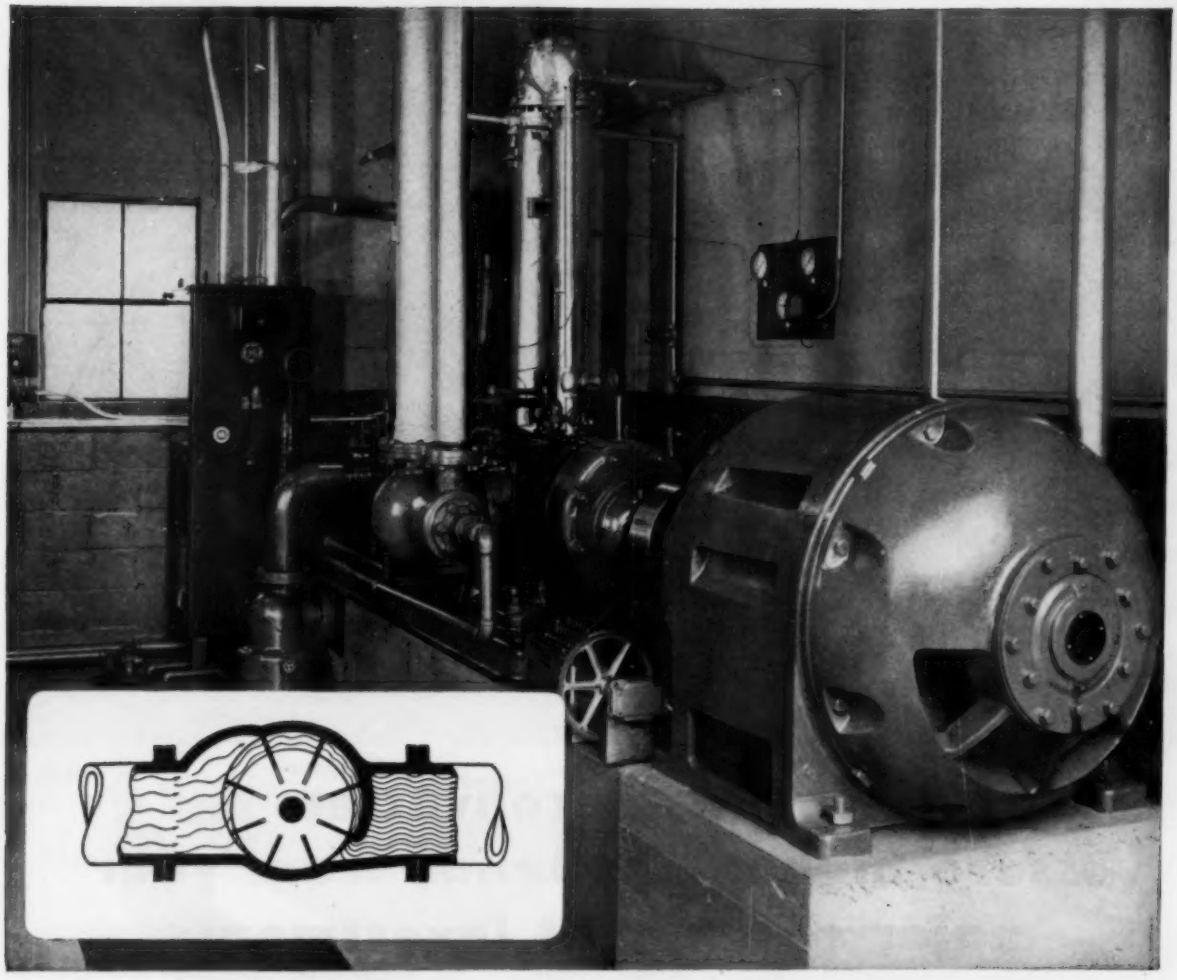
TRAYLOR ENGINEERING & MFG. CO.
925 MILL ST., ALLENTOWN, PA.
Sales Offices: New York—Chicago—San Francisco
Canadian Mfr.: Canadian Vickers, Ltd., Montreal, P.Q.

the experts agree . . . there's nothing like

TRAYLOR-MADE

equipment for peak performance

A Traylor leads to greater profits



TWICE THE CAPACITY

of a Comparable Duplex Horizontal-belted Reciprocating Compressor

The Fuller Rotary serves best when you require additional compressed air, and available space for a compressor is limited.

It has twice the capacity of a comparable duplex horizontal-belted reciprocating unit, is singularly lacking in vibration, and requires only a nominal foundation to support its weight.

Operating at normal speeds, the Fuller Rotary Compressor is direct-connected and needs no cumbersome reduction gearing or belts. You can put a Fuller Rotary in almost any unused corner, or on a balcony, or (in reasonable size) even suspend it from the rafters.

Normal industrial pressure to 125 psig; capacities to 3300 cfm. Detailed information on design characteristics and typical space-saving applications will be forwarded on request.

Fuller

. . . . pioneers in harnessing AIR

FULLER COMPANY
GENERAL AMERICAN
TRADE MARK

FULLER COMPANY, 100 Bridge St.
Catasauqua, Pa.

GENERAL AMERICAN TRANSPORTATION CORPORATION SUBSIDIARY

Chicago • San Francisco • Los Angeles • Seattle • Birmingham

C-270
1555

How torque converters *assure* higher dividends from your major equipment investments

Twin Disc Torque Converters, dependably and efficiently transmitting power to your heavy-duty machinery, *assure you a higher return* on your equipment investment, through *more work done in less* time . . . with a *minimum of maintenance and costly downtime.*

Here are six *profitable,* proved reasons why Twin Disc Torque Converters help you to earn *more* from your major equipment investments . . . such as the Allis-Chalmers HD-21 Tractor pictured above.

1. Three-stage design provides the highest engine output torque multiplication available—eliminating harmful, costly engine lugging and stalling.

2. Engines work up in the maximum efficiency range all the time, delivering *constant,* high-horsepower output . . . doing *more work* than units equipped with mechanical drive.

3. Power is matched to load demands automatically with gear shifting minimized or eliminated—where mechanical transmissions usually must *stay* in the starting gear ratio, even after starting load resistance is reduced . . . operator efficiency is boosted.

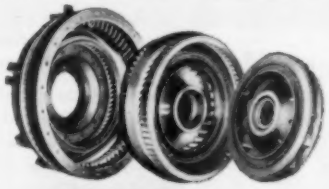
4. Heavy load pick-up is smooth, even, without clutch slippage . . . better flotation is obtained.

5. Overloads, shock loads and vibrations are cushioned out, through *fluid* connection . . . providing longer tractor life with less maintenance.

6. Infinite variety of ratios is available to work with, permitting smooth, accurate control of loads.

Be sure to specify a torque converter in *your* next Allis-Chalmers HD-16! And investigate the advantages of Twin Disc Torque Converters—both single-stage and three-stage—for most other heavy-duty applications from 30 to 1000 hp.

This A-C HD-21 features A-C Torque Converter Drive as standard (incorporating Twin Disc Torque Converter components). And, to get more work done, you can specify this same type torque converter drive on your next new HD-16.



TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES

TWIN DISC
Torque Converters

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin (Hydraulic Division), Rockford, Illinois

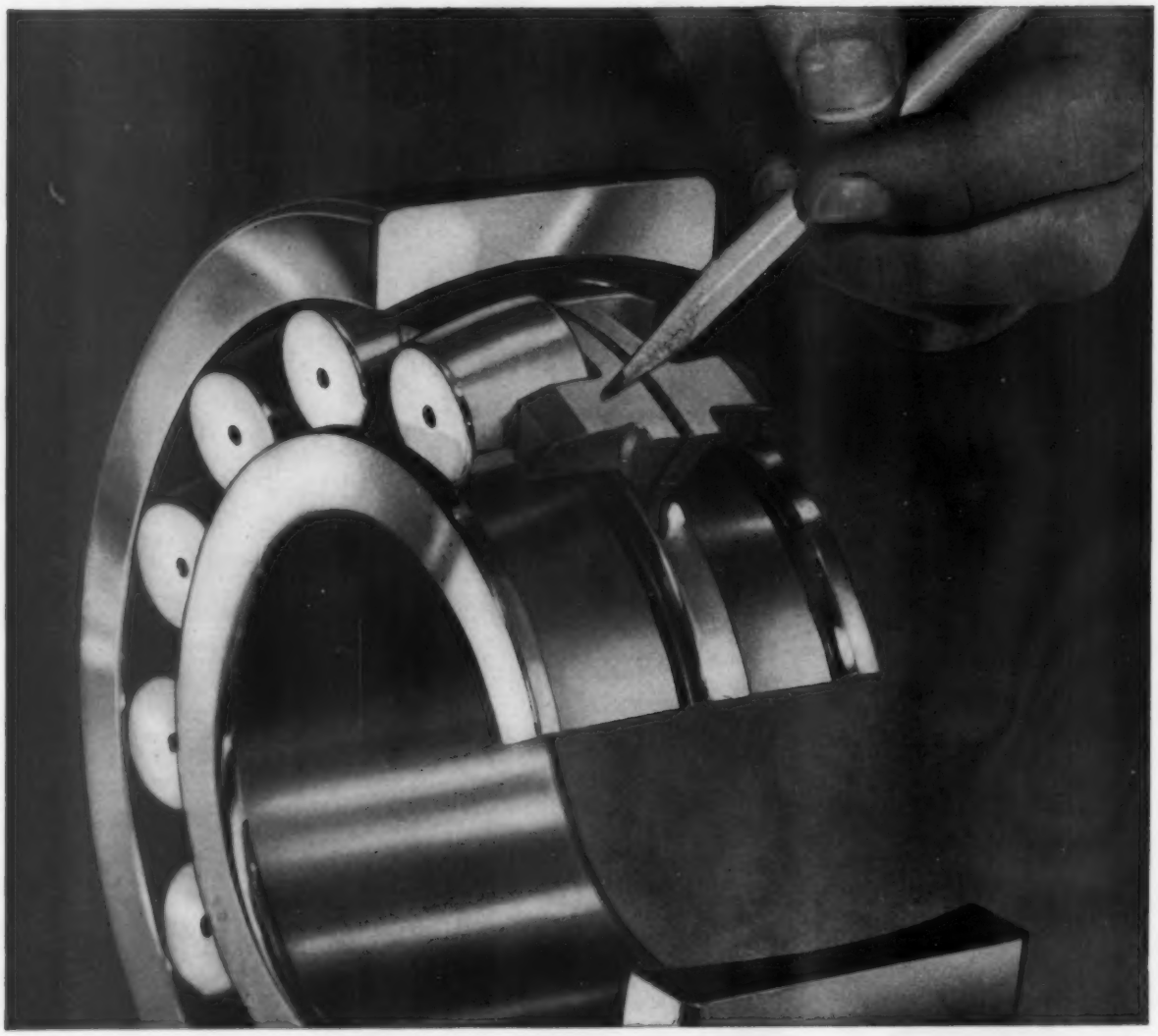
Roebling Royal Blue Wire Rope will **bend** and **bend** and **bend!**

What's more, Roebling Royal Blue is *stronger* than the strongest wire rope previously available. It will do more work and last longer on *your* job. Call your distributor or your nearest Roebling office for full information about Royal Blue, the really better wire rope. John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

ROEBLING

Distributors, Branches and Warehouses Throughout the Country—Subsidiary of The Colorado Fuel and Iron Corporation

TORRINGTON *SPHERICAL ROLLER* BEARINGS



Land-riding cages for longer life!

These fully machined cast-bronze, land-riding cages—one for each path of rollers—are important performance builders in TORRINGTON'S Spherical Roller Bearings. The one-piece retainers keep the rollers perfectly aligned at all times, even under conditions of shock load and sustained speeds. Lubrication is more effective, too, as the lubricant has easy access to vital points of contact between rollers and races.

This feature is typical of TORRINGTON'S design, made possible through long experience in serving industry with the finest in precision bearings. That's why it pays to look to TORRINGTON first when your application calls for Spherical Roller Bearings. They're available from stock with either straight or tapered bore, for shaft or adapter mounting.

THE TORRINGTON COMPANY
South Bend 21, Ind. • Torrington, Conn.
District offices and distributors in principal cities of United States and Canada

TORRINGTON BEARINGS
Spherical Roller • Tapered Roller • Cylindrical Roller
Needle • Ball • Needle Rollers

"Screen changing is faster and easier with SUPER-TEMPERED SCREENS"

—so says Mr. Curtis S. Harper, Superintendent of Operations at the 5000-ton-per-day plant of the Flint Sand and Gravel Company, Bluff Creek, La.

Flint is a division of Jahncke Service Incorporated, New Orleans, one of the South's leading producers of ready-mix concrete, concrete pipe and aggregate. Flint is called upon to produce many sizes of sand and gravel for Jahncke's operations. "This means that we have to change our screens as often as three times a day," Mr. Harper says. "It's here that Super-Tempered Screens really pay off.

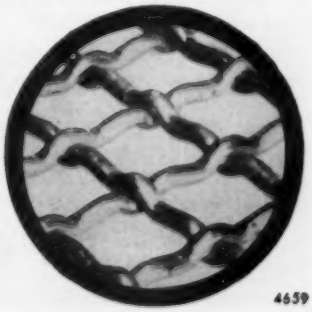
"Because Super-Tempered Screens are so tough, we can employ a screen with a smaller diameter wire than we formerly used. This results in a lighter-weight, more flexible screen, which allows easier changing. Before switching to Super-Tempered Screens, it took approximately 65% longer to change a set of three screens. In addition, the lighter screen weight enabled us to cut our six-man crew down to five.

"Super-Tempered Screens helped us lick another problem," says Mr. Harper. "With our old screens, the ends bent down when a wire broke. This left holes in the screen, throwing our tolerances off by allowing larger stones to pass through. But the wires of Super-Tempered Screens are so hard that they don't fold under when broken. In fact, when the cross-over section of these screens gets thin, we can safely reverse the screen. This gives us, in effect, double life from each screen.

"Furthermore, the smaller wire diameter of the Super-Tempered Screen gives us a greater percentage of open area per square foot. This not only increases screen efficiency by allowing more "thru-put" per hour, but also results in less choking from the clay overburden that passes through the plant," Mr. Harper concludes.

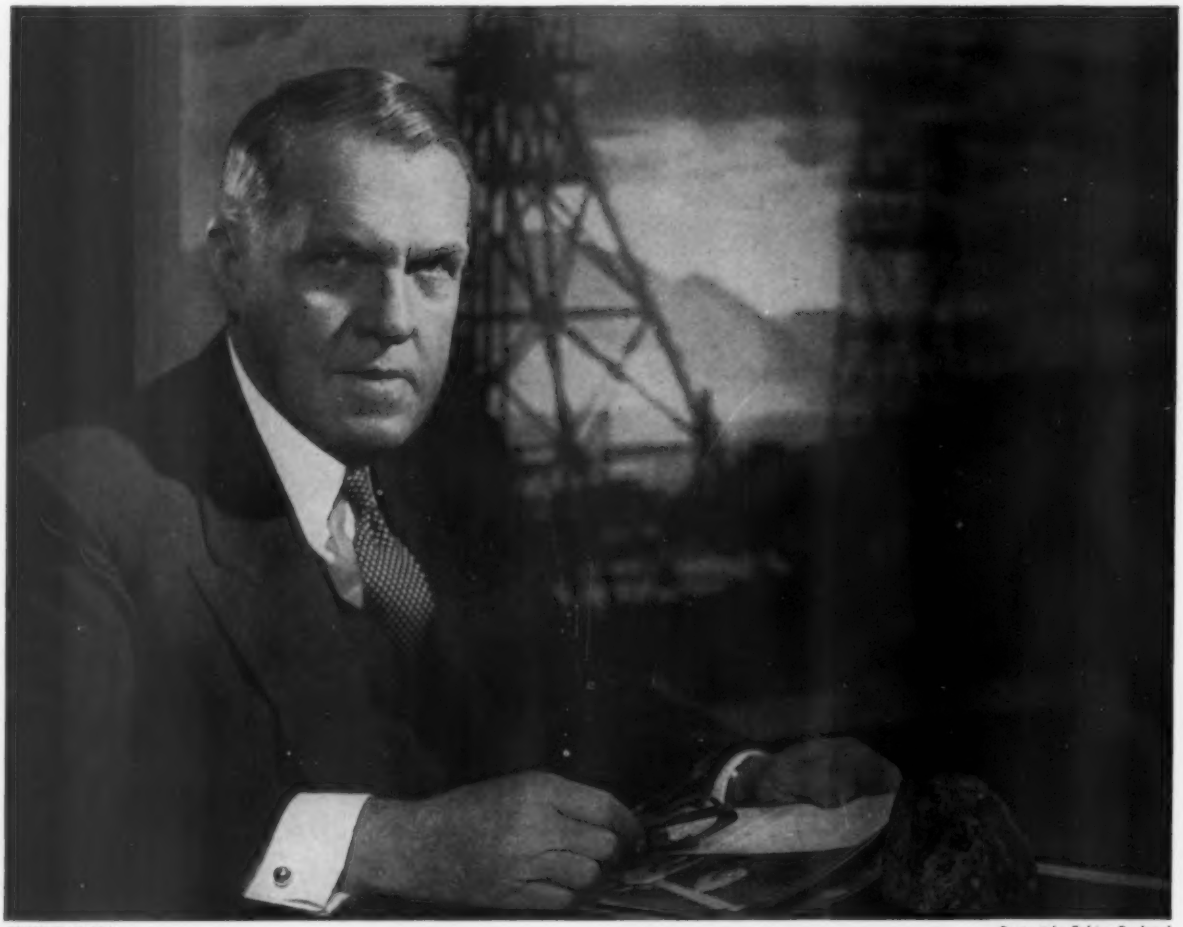
If yours is a normal plant operation . . . or one that requires unusually frequent screen switching . . . it'll pay you to get complete details on how Super-Tempered Screens can help you. Why not contact our nearest sales office today?

CF&I SPACE SCREENS
THE COLORADO FUEL AND IRON CORPORATION



4659

THE COLORADO FUEL AND IRON CORPORATION—Albuquerque • Amarillo • Billings • Boise • Butte Casper • Denver • El Paso • Ft. Worth • Houston • Lincoln (Neb.) • Los Angeles • Oakland • Oklahoma City Phoenix • Portland • Pueblo • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane • Wichita
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo • Chicago • Detroit • New Orleans New York • Philadelphia
CF&I OFFICES IN CANADA: Montreal • Toronto • CANADIAN REPRESENTATIVES AT: Calgary • Edmonton Vancouver • Winnipeg



CLYDE E. WEED

Portrait by Fabian Bachrach

"22,514 Anaconda Employees Are Buying U. S. Savings Bonds

"In October, 1955, only 34% (11,140) of the nearly 33,000 Anaconda organization employees in this country were buying U. S. Savings Bonds through the Payroll Savings Plan.

"Late in 1955, we conducted a simple person-to-person canvass which put a Payroll Savings Application Blank in the hands of every employee. There was no pressure, no special promotion – just the Application Blank. Our employees did the rest.

"Recently, our records showed that 22,514 of our men and women–69%–are now Payroll Savers. Every new employee is given a Payroll Savings Application Blank and an opportunity to join with his fellow workers in building personal security through systematic thrift.

"We believe The Payroll Savings Plan–with an enrollment of 8,000,000 employees of more than 40,000 companies–is a significant contribution to the Government's effort to check inflation and maintain a sound dollar."

CLYDE E. WEED, *President*
The Anaconda Company

Why not take a *personal* interest in *your* Payroll Savings Plan? Your State Director will be glad to show you how to install the Payroll Savings Plan or revitalize an existing plan. Phone, wire or write, today, to Savings Bond Division, U. S. Treasury Department, Washington, D. C.

The United States Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

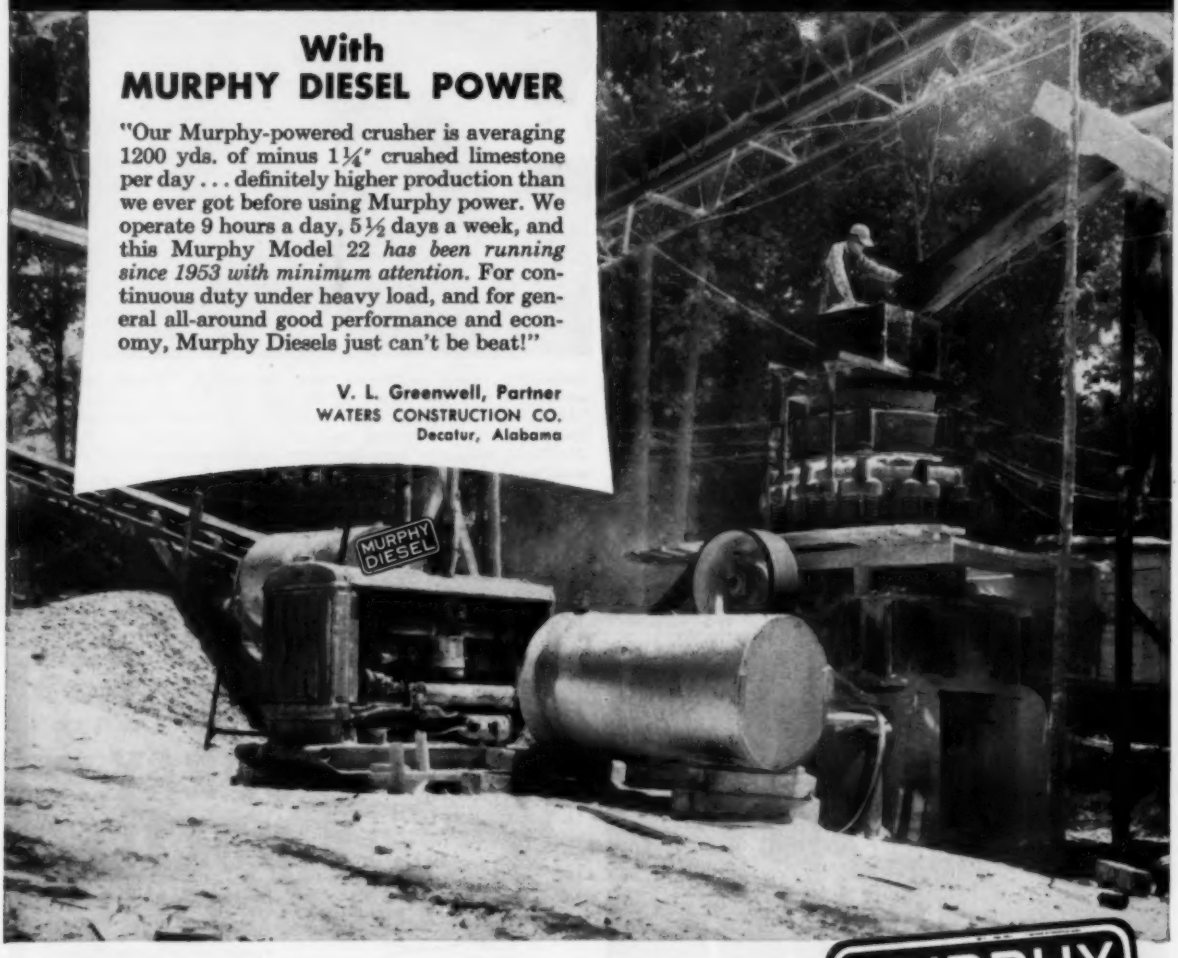
PIT & QUARRY PUBLICATIONS, INC.

⅓ MORE PRODUCTION . . . ⅓ LESS MAINTENANCE . . . ¼ LOWER FUEL COSTS

With MURPHY DIESEL POWER

"Our Murphy-powered crusher is averaging 1200 yds. of minus 1¼" crushed limestone per day . . . definitely higher production than we ever got before using Murphy power. We operate 9 hours a day, 5½ days a week, and this Murphy Model 22 *has been running since 1953 with minimum attention.* For continuous duty under heavy load, and for general all-around good performance and economy, Murphy Diesels just can't be beat!"

V. L. Greenwell, Partner
WATERS CONSTRUCTION CO.
Decatur, Alabama



When it comes to heavy-duty power for aggregate plants, shovels, draglines, generators, pumps, compressors, etc., Murphy Diesels are recognized throughout the construction industry for their dependability, long life, trouble-free service and economy that's unmatched by any other engine of comparable size. Why don't you put the many exclusive advantages of Murphy Diesel engines to work on your next job? Your Murphy Diesel Dealer can tell you how they'll make more money for you.

356RO

MURPHY DIESEL

Heavy-Duty Power
for Rock Crushing

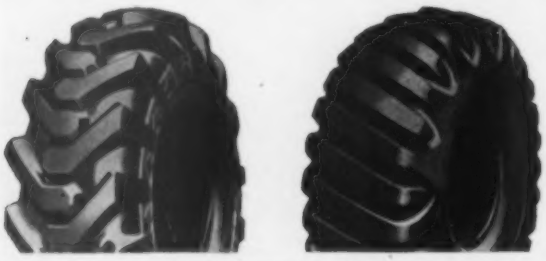
Murphy Diesel engines and power units are available in sizes from 96 to 264 H.P. with engine speeds of 1200 and 1400 rpm. "Packaged" generator units are available with capacities ranging from 64 to 165 K.W.

MURPHY DIESEL COMPANY
5307 W. Burnham St., Milwaukee 14, Wis.

Carolina BIG TIRE Specialists

Earth Mover Tire Recapping Service
CUTS COSTS PER MILE AND PER TON

WE GO ANYWHERE, ANYTIME,
for Site Service, Pickup and Delivery



WHAT OUR CUSTOMERS SAY:

The W. E. Graham Construction Co. of Maryland writes: "CAROLINA saves us thousands of dollars a year on tires. Recapping and repairing saves 50% of new tire cost, and the recaps run just as long."

Write for full details

CAROLINA expert performing on-the-job service. A new tire for an earthmover may cost nearly $4000. YOU can cut this in half by using CAROLINA tested-and-proved methods. We specialize in servicing these tires for contractors, quarry and strip mine operations.
CAROLINA maintains more than 2000 service dealers in 30 states and some foreign countries.

CAROLINA TIRE COMPANY • 232 N. Main St., Salisbury, N.C.

H&L

Teeth that really dig!

Pat. No. 2,568,075
Pat. No. 2,669,153

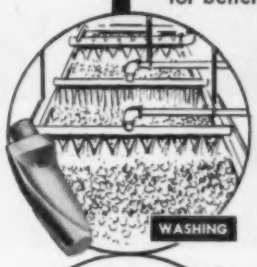
H&L TOOTH COMPANY

1540 South Greenwood Avenue Montebello, California

for better washing . . . dust control . . . concrete curing

SPRAY NOZZLES

from Spraying Systems Co.



- **complete choice of types and capacities to fit your job**
- **greater efficiency with minimum volume of water**

Proper distribution and impact for washing . . . or proper atomization for dust control and concrete curing without unnecessary wetting . . . these are just some of the advantages of having a complete choice of spray nozzle types and sizes to fit your job. For complete information write for Catalog 24.

SPRAYING SYSTEMS CO.
3224 RANDOLPH STREET
BELLWOOD, ILLINOIS

"CROSS HEXCREEN"

A Honey of a Screen for

More Strength

More Capacity and

Engineered Performance

Look for this stamp on all "Cross" Products

The sign of PLUS QUALITY for PLUS PERFORMANCE

CROSS Perforated Steel Sections and Decks for VIBRATING — SHAKING — REVOLVING SCREENS

CROSS ENGINEERING COMPANY

Manufacturers • Carbondale, Pennsylvania • Telephone: 300

"CROSS" SERVICE AVAILABLE in Principal Cities

New York, N. Y. — 101 Park Ave. — MUrray Hill 5-0253

LOW COST POWER

For Fast "Secondary Breakage"

FREDERICK

CAST SEMI-STEEL

DROP BALLS

Tough, rugged Frederick Drop Balls give you crushing power where you want it, when you want it . . . cut down expensive drilling or blasting . . . give long, economical service with little or no maintenance. Exclusive "Pear shaped" design withstands greater impact—drops straighter. "E-Z Swing" recessed steel eye gives cable protection plus free swinging action. Use Frederick Cable Weights (135 & 250 lbs.) and Frederick Swivels on all size balls for true, safe cable performance. Nickel alloy standard on all 4000 lbs. or over—or special alloys furnished on request. Balls can be furnished with replaceable pins. Special release hooks for free dropping also available.

Write us today for prices and illustrated literature. Order Balls direct or see your nearest Equipment Dealer.

	Wide Range of Sizes and Weights:						
Pear shape (lbs.)	1500	2000	3300	4000	5200	6500	8000
Ball shape (lbs.)	500	1000	2000	5200			
Spherical shape (lbs.) (for magnet use)	470	950	1650	2400	3000	3700	5400

FREDERICK IRON & STEEL, INC.

FREDERICK *Established 1890* MARYLAND

Phone: MOnument 3-5111

CENTRIFUGAL PUMPS • MUNICIPAL AND GRAY IRON CASTINGS

STANDARD

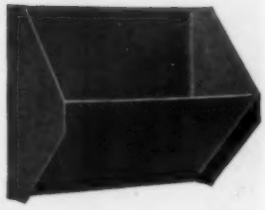
ELEVATING AND CONVEYING EQUIPMENT

•Greater Strength•

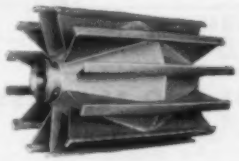
•Longer Life•

•Lower Cost•

CONTINUOUS ELEVATOR BUCKET STYLE No. 2



Put this Standard Bucket to work handling the toughest materials, and it takes the job right in stride—resisting abrasion, corrosion and wear. This bucket is typical of the complete line of low cost, rugged Standard Steel Buckets—available in Salem, Style "A," shelf type and other continuous style buckets.



STANDARD WING TYPE SELF-CLEANING PULLEY

The most severe operating conditions won't bother this Standard Pulley because its all-steel welded construction gives it far greater strength and resistance to breaking. And yet it weighs less . . . costs less.

STANDARD BIN GATE

Profit from faster, easier material handling made possible by this gear-operated all-steel Standard Bin Gate. Other styles in Standard Bin Gates also available.

For lower maintenance and material handling costs, convert to Standard. Write today for catalog showing the complete Standard line.

The Standard Metal Mfg. Co. SINCE 1921

STANDARD METAL MFG. CO.

111 CENTER ST. MALINTA, OHIO

"Our equipment keeps on rolling—

We use Colmonoy No. 2, the Best Hard-Facing!"

You get top abrasion resistance and easy welding with low-cost Colmonoy No. 2 hard-facing electrodes. Use them on tractor treads, dipper teeth, ditcher teeth, truck beds, dragline buckets, any steel or manganese steel part.

Excellent arc stability and good flowing qualities make these low hydrogen AC-DC electrodes a cinch to apply. A Colmonoy No. 2 deposit has a Rockwell C hardness of 50 to 60.

Write today for more information about Colmonoy No. 2 and the rest of the Colmonoy family of hard-facing alloys.

HARD-FACING ALLOYS

19345 JOHN R STREET **WALL COLMONOY** CORPORATION DETROIT 3, MICHIGAN

BIRMINGHAM • BUFFALO • CHICAGO • HOUSTON • LOS ANGELES
LINDEN, N. J. • MORRISVILLE, PA. • PITTSBURGH • MONTREAL • GREAT BRITAIN

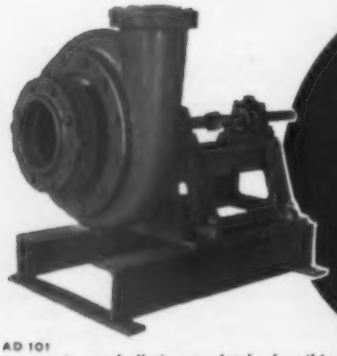
Available in 1/8, 5/32, 3/16, and 1/4-inch diameters, packed in 10-lb. sealed metal containers.

For Handling Abrasive, Fine Mesh Solids at Minimum Cost!

Lightning
MODEL RU
RUBBER LINED PUMPS

OUTLAST METAL LININGS 5 TO 10 TIMES!

Ideal for handling silica sand, glass sand, coal silt, remnants from classifiers or any other abrasive slurry. The simple design of the pump and its long wearing construction assure long, trouble-free service life, high operating efficiency and a minimum of care. Available in 6" x 8" and 4" x 6" sizes.



- NO PERIODIC ADJUSTMENTS
- ONLY THREE WEARING PARTS
- NON-CLOGGING IMPELLER
- STAINLESS STEEL SHAFT

AD 101

A new bulletin completely describing this pump is available... write

KANSAS CITY HAY PRESS CO.

Manufacturers of Heavy-Duty Lightning Sand and Gravel Pumps

801 Woodswether Road Kansas City, Missouri

HINGED PLATEGRIP
BELT FASTENER No. 500

Write for Circular

ARMSTRONG-BRAY & CO.
5394 Northwest Highway · CHICAGO 30, U. S. A.

FOR HEAVY CONVEYOR BELTS OF CHANGING LENGTHS

These heavy-duty belt fasteners make a strong, flexible joint in conveyor belts, belts of any width and of from 3/16" to 1/2" thickness. They offer special advantages in mines, quarries or industrial set-ups where length of position of belt is frequently changed, because sections can be removed or added at will. Joints are opened for this purpose by simply pulling out the hinge pin.

Easily and quickly applied on the job or in the shop. Special design gives deep compression into belting and smooth, flush joint.

CONTRACT CORE DRILLING

EXPLORATION FOR MINERAL DEPOSITS
INCLUDING URANIUM & LIMESTONE — ANYWHERE

FOUNDATION TEST BORING

GROUT HOLE DRILLING

Skilled crews and complete stock of core drills and accessory equipment maintained at all times

Core Drill Contractors for more than 60 years

JOY MANUFACTURING CO.
Contract Core Drill Division
MICHIGAN CITY, INDIANA

For Dust Collection...

Western Precipitation
presents
its latest development
in a quarter-century of
continuous advancement
in Mechanical Collectors

...The "9VGR" MULTICLONE!

Over 25 years ago

Western Precipitation Corporation pioneered the high-efficiency multiple-tube principle that has proven so superior it is now the pattern for the industry.

The Multiclone continues to be years ahead of all other centrifugal collectors because it incorporates the invaluable "know-how" gained through these many years of leadership in the field—leadership that is further emphasized by introduction of the 9VGR Multiclone, another important milestone in Multiclone's quarter-century of outstanding performance.

COTTRELL Electrical Precipitators
MULTICLONE Mechanical Collectors
CMP Combination Units
DUALAIRE Reverse-Jet Filters
HOLO-FLITE Processors

NEW 9VGR FEATURES...

1. *No need for continuous external support.*
2. *Easier and less costly to insulate.*
3. *Minimum dust stratification.*
4. *Improved dust distribution to all tubes.*
5. *Simpler installation, lower erection costs.*
6. *Freedom from leakage at all critical points so that full collection efficiency is obtained.*

Plus **The proven superiority of CAST IRON TUBES and VANES!**

Through the years, others have tried special alloy steels and so-called "miracle" metals, but nothing has proven as satisfactory *in actual field service* as cast iron. In the past quarter-century more than 270,000 Multiclone tubes have been placed in service with less than 1.85% replacement—*a performance record unequalled in the industry!*

There are many other advantages built into the 9VGR. There is a Multiclone representative near you who will be glad to supply complete details. Or write direct, asking for your free copy of Bulletin #M209 which contains full details.

Western Precipitation Corporation

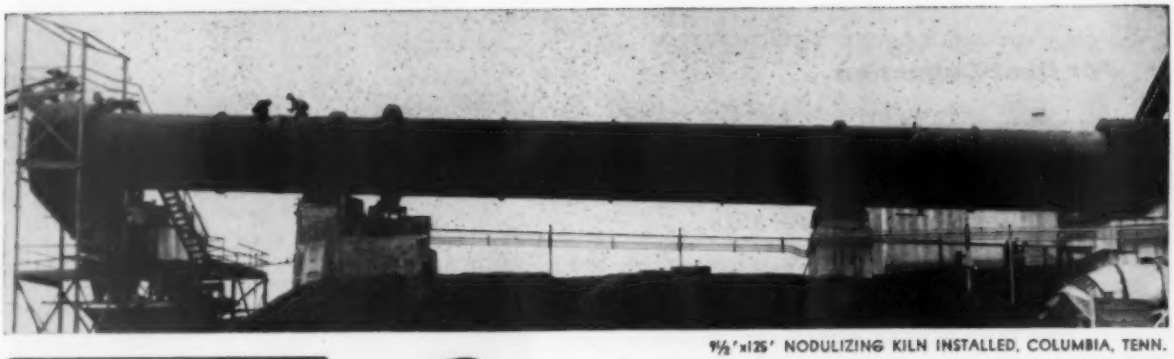
Designers and Manufacturers of Equipment for Collection of Suspended Material from Gases ... and Equipment for the Process Industries

Main Offices: **1015 WEST NINTH STREET, LOS ANGELES 54, CALIFORNIA**

Chrysler Building, New York 17 • 1 North La Salle Street Building, Chicago 2 • Oliver Building, Pittsburgh 22 • 3252 Peachtree Road N. E., Atlanta 5 • Hobart Building, San Francisco 4

Precipitation Company of Canada Ltd., Dominion Square Building, Montreal

Representatives in all principal cities



9½'x125' NODULIZING KILN INSTALLED, COLUMBIA, TENN.

We design and manufacture

ROTARY KILNS

•

DRYERS

•

COOLERS

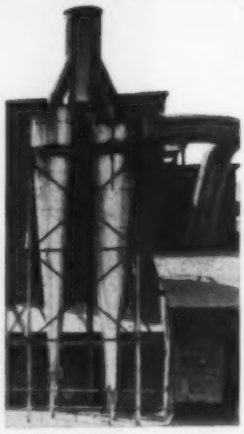
•

LIME HYDRATORS

•

DUST COLLECTORS

and design the plants in connection with the same.



NEW HIGH EFFICIENCY DUST COLLECTOR

7'x40' CLAY DRYER INSTALLED IN HENDERSONVILLE, N. C.

W. P. HEINEKEN, INC.

ENGINEERS MANUFACTURERS

50 BROAD STREET • NEW YORK 4, N. Y.

PIT and QUARRY HELPS YOU OPERATE MORE PROFITABLY

Every issue of PIT AND QUARRY is full of information you can use in your business. It gives you ideas on every phase of your operations.

To keep its readers fully informed, PIT AND QUARRY taps every source. Our field editors travel more than 30,000 miles a year to describe the processes and methods used by the outstanding plants making your type of product. Government activities affecting the field are interpreted so that you can better adjust your business to their regulations. Complete reports of all important conventions are published in PIT AND QUARRY.

New equipment and supplies which make production more efficient are announced in each issue.

Reading PIT AND QUARRY is like having a conference every month with the leading men in your industry. You don't have to stir out of your chair to get information that otherwise would take you years to obtain by your own efforts and experience.

The cost of this service is only $3 a year. Start your subscription at once by just filling and mailing the coupon.

PIT AND QUARRY PUBLICATIONS
431 S. Dearborn St., Chicago 5, Illinois

Enclosed find remittance for which enter my subscription to Pit and Quarry for 1 year at $3.00. (Foreign add $3.00 per year.)

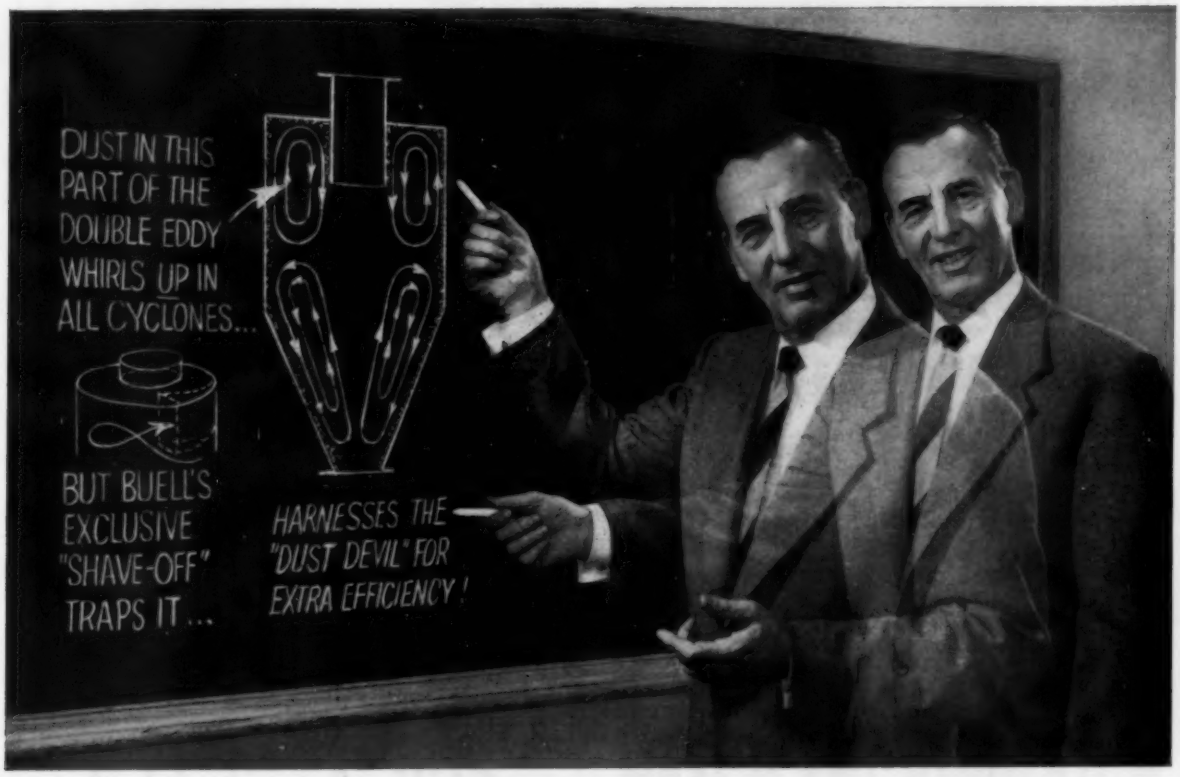
My Name.....Title.....

Company Name.....

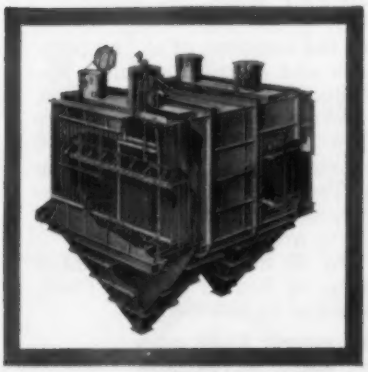
Send to (address).....

We produce.....

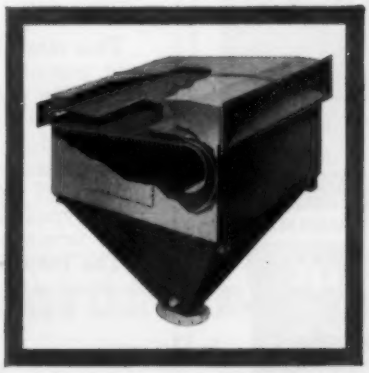
Mastering the double-eddy dust devil leads to extra dust collection efficiency!


DUST IN THIS PART OF THE DOUBLE EDDY WHIRLS UP IN ALL CYCLONES...
BUT BUELL'S EXCLUSIVE "SHAVE-OFF" TRAPS IT...
HARNESSES THE "DUST DEVIL" FOR EXTRA EFFICIENCY!

Other design features which increase efficiency include large, clog-proof diameter, proper proportioning for maximum dust separation, extra-heavy-gauge, wear-resistant construction . . . features which shave dust collection costs to the minimum!



Buell SF Electric Precipitator also delivers *extra dust collection efficiency*, due to unique Spiralectrodes and Continuous Cycle Rapping.



Buell Low Resistance Fly Ash Collector combines top efficiency with low draft loss, for either natural or mechanical draft installations.

For more specific data about Buell's *extra efficiency*, write Dept. 18-C, Buell Engineering Company, 70 Pine St., New York 5, N. Y.

buell®

MECHANICAL ELECTRICAL *Experts at delivering Extra Efficiency in* **DUST COLLECTION SYSTEMS**

ADMIRO...for L-O-N-G-E-R Truck Bed Service

HEAT TREATED
ALLOY STEEL

Truck beds naturally take a beating, but they last a lot longer when protected the ADMIRO way. This is the modern, effective defense against severe abrasion and heavy impact. ADMIRO Heat Treated High Tensile Alloy Steel increases machine service life . . . lowers down-time . . . reduces upkeep to a minimum. Available in bars and plates.

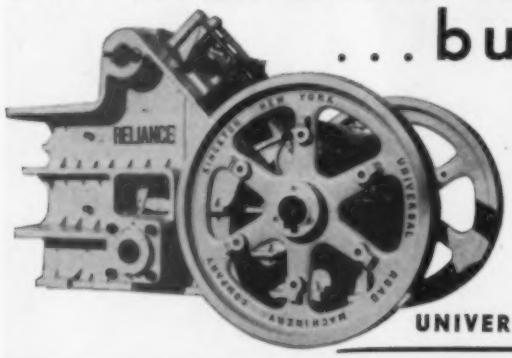
COMPLETE FABRICATING FACILITIES
Welding—Rolling—Forming
Intricate Shapes Cut to Specification

Recommended Applications: Wear liner plates, crushers, hoppers, buckets, bins, chutes, dirt and rock recovery equipment. Special uses in Mining, Quarrying, Cement and Aggregate Plants.

Write for Bulletin

ADMIRAL ALLOY STEEL CORP., 850 Euclid Ave., Cleveland 14, Ohio
ADMIRAL ALLOY STEEL CORP. of Texas, 2802 Rector St., Dallas 15, Texas

The "IRON HORSE" of HEAVY DUTY CRUSHERS ...built by RELIANCE



"It's a horse for work" . . . perfect description of this massive RELIANCE unit, with *built-in* life-time service. Greater weight gives more stability . . . results in minimum operating and upkeep costs. Designed with long jaw plates adjustable for all fineness ranges.

RELIANCE builds crushing, screening and washing plants from 50 to 1500 tons per day capacity.

Write Today for Bulletin

UNIVERSAL ROAD MACHINERY CO., Kingston, N. Y.

NO CONCRETE PIT!

Easiest to MOVE!

PORTABLE TRUCK SCALES

Engineered for rugged use in the field. Low initial cost, no maintenance. Can be used as PITLESS SCALE saves on pit costs.

CAPACITIES: 20 to 52 tons. DECK LENGTHS 18 to 43 ft.

OTHER THURMAN SCALES: Pit • Warehouse • Industrial • Liquid Weighing • Wheelbarrow • Batching • Automatic

Precision Scales since 1918

THURMAN SCALE COMPANY

156 N. 5th St. Dept. PI-1 Columbus, Ohio

Still Available!

NEWEST

PORTLAND CEMENT

PLANT MAP

This map shows the locations of all the portland cement plants and distributors now operating in the United States, Canada, Mexico, Alaska, Hawaii, and Cuba, plus those that were completed in 1956. These plants are listed alphabetically, by state and city, so they can be located easily. Production capacity in barrels, types of process, and brand names of each firm's products are also shown.

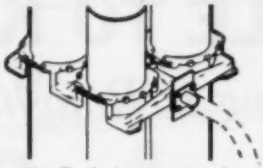
The map is 34 by 40 inches and is printed in black and white on heavy, durable 60-lb. paper stock. Prices are as follows:

1-10 maps	**$1.00 each**
11-25 maps	**$ .75 each**
more than 25 maps	**$ .50 each**

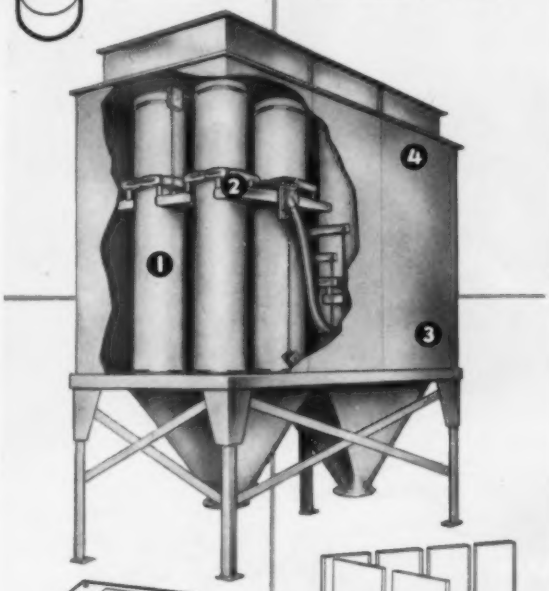
Please make your request for these maps on your company letterhead. Also, send along a check, cash or money order to cover the number of maps you wish to purchase.

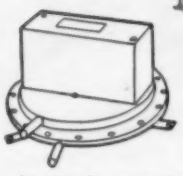
PIT AND QUARRY PUBLICATIONS
431 S. Dearborn St. • Chicago 5, Ill.

1 Uniformly dense felt filter bags... of wool or synthetics...produce maximum filtering efficiency yet have 6 times flow rate of ordinary woven filter material. Tiny pores catch and hold even sub-micron-sized particles. Bags measure 12″ in diameter... up to 18′ in length.

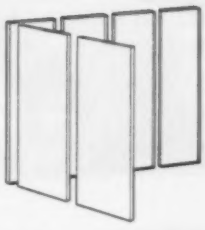


2 Exclusive reverse-air-jet action cleans entire bag area uniformly and automatically. Blow rings* travel up and down length of bag exterior . . . blowing through bag to remove accumulated dust from bag walls. Automatic cleaning never interrupts peak filtering efficiency.





3 Automatic pressure switch* eliminates overcleaning . . . prolongs bag life. Switch controls blow ring operation. Above normal pressure loss actuates rings which stop when pressure loss normalizes. Automatic self-cleaning occurs as often or as seldom as needed.



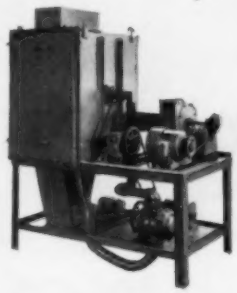
4 Prefabricated Aeroturn can be installed in one-quarter the time required by ordinary dust collectors of similar capacity . . . in half the space. Aeroturn arrives from the factory in easy-to-assemble prefabricated sections.

50% LOWER MAINTENANCE COSTS and 99.9%+ EFFICIENCY

with KOPPERS Series 12 Aeroturn Dust Collectors

Up To 75% Lower Installation Costs . . . Up to 50% Less Space! You can get rid of dollar-consuming dust far more economically with a Koppers Series 12 Aeroturn than with a conventional collector. The Aeroturn Dust Collector costs you less to install and maintain . . . occupies far less space. A Koppers Series 12 Aeroturn operates continuously and automatically at highest filtering efficiency.

Aeroturn's remarkably high filtering efficiency sends your plant and machinery maintenance costs way down. Your heating and cooling costs fall because you can recirculate air . . . cleaner than outside air. Koppers Series 12 Aeroturn Dust Collector is available with from 4 to 64 filter bags . . . Aeroturn's capacities range from 1,000 to 60,000 CFM. It only takes a few minutes of your time to discover for yourself the many cost-saving features of the Koppers Series 12 Aeroturn.



Factory-assembled and test-operated, Koppers Model D Aeroturn Dust Collector combines features of Series 12 with unusual compactness. Capacities range from 500 to 4,800 CFM.

AEROTURN DUST COLLECTORS

KOPPERS®

Koppers Company, Inc.
Metal Products Division
Industrial Gas Cleaning Dept.

***Engineered* Products**
Sold with *Service*

**Hersey Patents*

Mail this coupon today!

KOPPERS COMPANY, INC., Industrial Gas Cleaning Dept., 4503 Scott Street, Baltimore 3, Maryland.

Gentlemen: Please send me a free copy of your Aeroturn Booklet with descriptions, drawings and photographs. ☐ Series 12 ☐ Model D

Name..... Title.....

Company.....

Address.....

City..... Zone..... State.....

A GOOD COUPLE TO KNOW

Where the Going is Rough!

Rough going is no problem when you have this combination of Naylor pipe and Naylor Wedgelock couplings for your pipe lines.

The light weight of this distinctive pipe makes it easy to handle and install over rough terrain. Yet, the Naylor structure packs the strength and safety you'd expect only in heavier-wall pipe.

Teaming up with Naylor pipe is the one-piece Wedgelock coupling—a fast, simple method of positive connection. It's the practical answer—especially where lines must be installed under unfavorable conditions.

For the full story, write for Bulletins 507 and 513.

NAYLOR

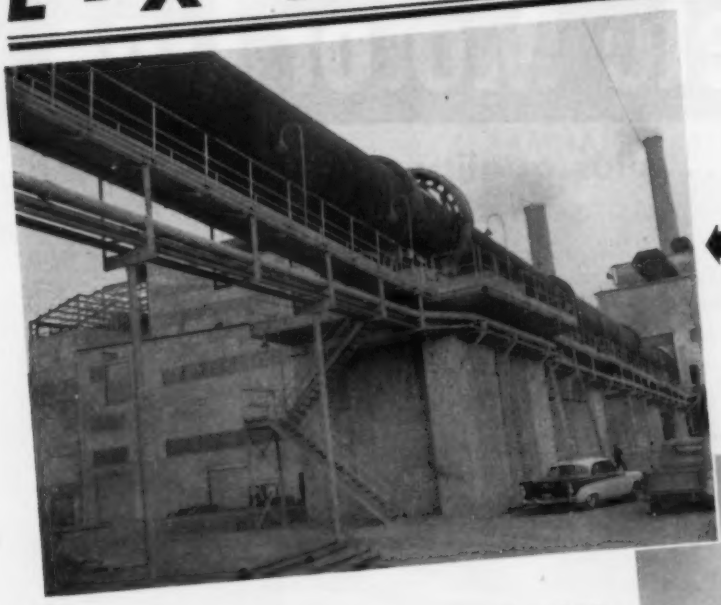
NAYLOR PIPE COMPANY
1257 East 92nd Street, Chicago 19, Illinois

Eastern U.S. and Foreign Sales Office:
350 Madison Ave., New York 17, New York

Another
MACDONALD
Project

E-X-P-A-N-S-I-O-N

Ups Production at
BESSEMER
Cement Plant



12-foot by 450-foot rotary kiln installed at Bessemer by MACDONALD, looking toward burner building.

The new cement plant of the Bessemer Limestone and Cement Company at Bessemer, Pa., adds 4000 bbl. to their daily capacity, nearly doubling the output of this operation.

Detailed design and construction of the entire plant expansion including 200,000 bbl. of bulk loading silos was done by Macdonald Engineering Co.

Bulk truck and car loading silos, Bessemer plant.

Interior of bulk truck loading silos.

MACDONALD
Established 1894

Consult MACDONALD for design and construction of new plants or extensions

MACDONALD ENGINEERING CO.

2349 Yonge St.
Toronto, Canada

Construction Engineers
22 West Madison St. - Chicago

885 Bryant Street
San Francisco, Calif.

There's MORE from Allis-Chalmers MOTOR distributors

Complete Motor Line

multi-speed

wound-rotor

face mounted

open

dc series wound

squirrel-cage

vertical solid shaft

totally enclosed

synchronous

vertical hollow shaft

drip-proof

foot mounted

splash-proof

"Synduction"

explosion-proof

dc compound wound

dc shunt wound

flange mounted

gear motors

. . . plus quality and service

As part of a national network of more than 200 franchised outlets, your nearby Allis-Chalmers Motor Distributor offers the rare combination of *fast service* and a *complete line* of *fine-performance* integral horsepower motors. He's the right man to give you just the right motor — in a hurry.

It adds up to:

1. Simplified Buying — Here's one source for all motors from 1 to 200 hp, as close as your telephone. Single source trims clerical costs, minimizes purchasing and accounting expenditures.

2. Reduced Inventory — You don't have to tie up funds and warehouse space with spare motors and replacement parts. The A-C Distributor is your motor storehouse.

3. Continuous Production — Your A-C Distributor can deliver a motor to your shop in a matter of hours. (And, once you order an A-C motor, you're sure of 'round-the-calendar operation.)

GET ACQUAINTED with your Allis-Chalmers Motor Distributor soon. You can find out his name by contacting the A-C sales office in your area, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin.

Synduction is an Allis-Chalmers trademark.

ALLIS-CHALMERS

A-C ALLIS-CHALMERS

A-5187

For the manufacturers of
Ready-Mixed Concrete
Prestressed Concrete
Precast Products
Concrete Blocks
Concrete Pipe

MARCH 1957

THE CONCRETE MANUFACTURER

A SPECIAL SECTION OF PIT AND QUARRY

Atlas Building Products Company, El Paso, Texas, One of the Largest Block Operations in the Southwest.

Floor-a-Week Frame Construction . . . 50% Form Saving

ENCORE FOR 'INCOR' This year's big news on South Florida's Gold Coast is the amazing Americana. Architect Morris Lapidus, who designed the Fontainebleau in 1954 and Eden Roc in 1955, has endowed the Americana with a distinction all its own, by blending touches of decor from all the Americas. Matching brilliant design is the staunch, fire-safe concrete construction, and newsworthy indeed is the Contractor's performance in completing this far-from-simple design in record time.

Miami Beach prohibits building December through March. So construction from foundation to lobby floor of the 15-story, 475-room guest unit was completed September through November. Resuming construction April 1, the Contractor went onto a high-speed 'Incor' schedule on the superstructure, to assure early-December opening.

Forms filled with concrete one day, stripped and jumped the next . . . structure topped out July 15 . . . 14 stories and roof erected in as many weeks. Typical 'Incor'* results: 50 to 60% saving on forms . . . faster completion, less job overhead . . . earlier rentals . . . quality concrete, with high ultimate strength matching high-early performance. Duplicating similar record on Fontainebleau and Eden Roc . . . another encore for 'Incor.'

*Reg. U. S. Pat. Off.

THE AMERICANA
Bal Harbour, Miami Beach
LAURENCE A. TISCH, President
Owner: TISCH HOTELS, INC.

Architects & Designers: MORRIS LAPIDUS
LEO KORNBLATH, Associate
New York-Miami Beach

Structural Engineers:
OBOLER & CLARKE, Miami Beach

Contractor:
TAYLOR CONSTRUCTION COMPANY, Miami

Ready-Mix 'Incor' Concrete
MAULE INDUSTRIES, INC., Miami

LONE STAR CEMENTS COVER
THE ENTIRE CONSTRUCTION FIELD

LONE STAR CEMENT CORPORATION

Offices: ABILENE, TEX. • ALBANY, N. Y. • BETHLEHEM, PA.
BIRMINGHAM • BOSTON • CHICAGO • DALLAS • HOUSTON
INDIANAPOLIS • KANSAS CITY, MO. • NEW ORLEANS • NEW YORK
NORFOLK • RICHMOND • WASHINGTON, D. C.

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 18 MODERN MILLS, 38,200,000 BARRELS ANNUAL CAPACITY

BAKER announces an ALL NEW PNEUMATIC-TIRED FORK TRUCK

Trail Axle
Double-yoke construction for extra strength. Longitudinal mounting in jumbo rubber blocks to provide lateral oscillation and absorb ground shocks.

Power Unit
Heavy-duty industrial gas engine with extra stamina for continuous rugged service. Features maximum fuel economy—minimum maintenance.

Power Steering
Standard at no extra cost. Effortless full-time power steering means less operator fatigue, greater safety and more work per day.

Lift and Tilt Controls
Conveniently located and easily manipulated levers for positive control of hydraulically-operated hoist and tilt motions.

Drive Axle & Transmission
Rugged Timken industrial truck axle and heavy-duty transmission, with two speeds, forward and reverse.

Single or Dual Wheels
Large pneumatic tires on drive wheels, with deep treads for maximum traction. Dual wheels available for extra heavy duty, better flotation and added stability.

Brakes—Hydraulic self-energizing, full-floating type—in drive wheels. Self energizing in both forward and reverse. Duo-grip, two-shoe independent parking brake on transmission shaft.

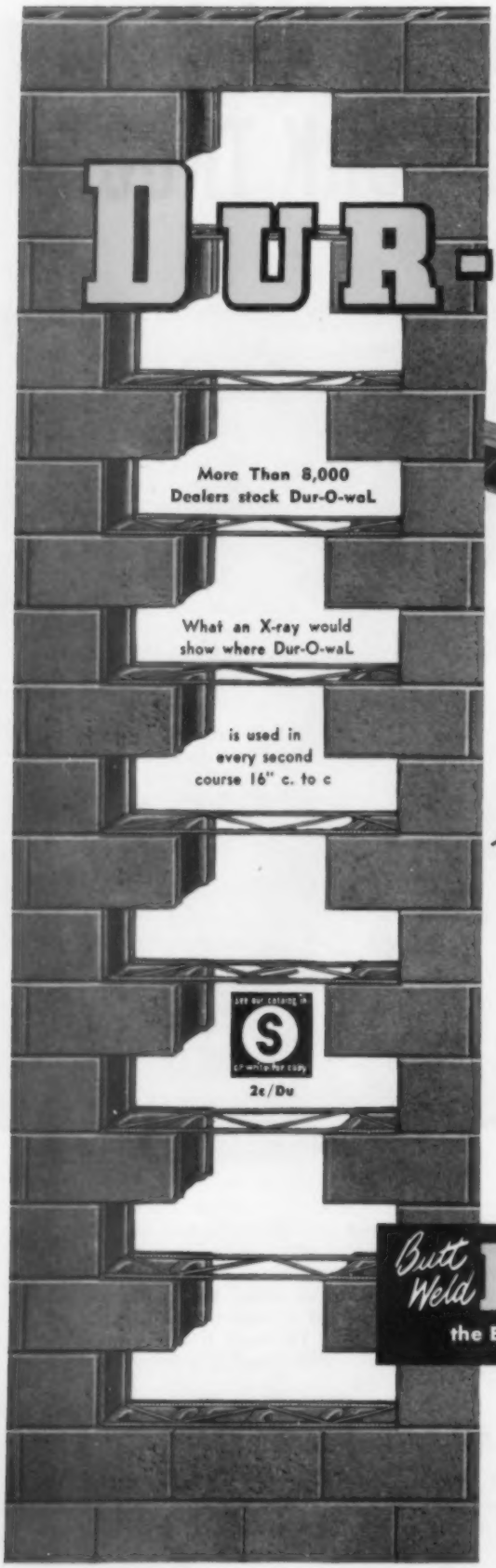
This Baker FGF-40, 4,000-lb. YARDLOADER, first in the new line of Baker pneumatic-tired gas fork trucks, has many new design features for greater maneuverability and more dependable performance. It is *fast*—top speed with load, 8.6 mph. It is *compact*—only 48 inch wheelbase, and minimum overhang—*and only 79 inch turning radius.* Low center of gravity makes this possible without sacrificing stability.

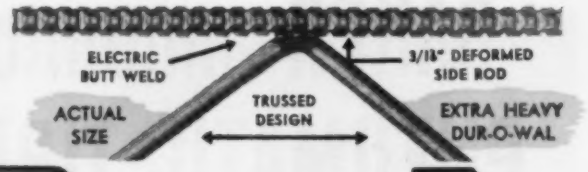
Absense of cowl provides maximum visibility. Power steering and many other driver conveniences make it one of the easiest handling fork trucks—and one of the safest. Full 130-inch lift, with single or dual cylinder. Truck-loading mast available with 110-inch lift and 71-inch overall height . . . For complete information ask for Bulletin 1382.

Baker®
industrial trucks

THE BAKER-RAULANG COMPANY
1215 WEST 80th STREET • CLEVELAND 2, OHIO
A Subsidiary of Otis Elevator Company

Otis 7G1





DUR-O-WAL®

RIGID MASONRY WALL REINFORCEMENT

Mechanical bond every 8 inches of wall . . . Two mortar locks at each weld . . . Electric butt welds place all rods on a single plane; make possible uniform mortar joints . . . Trussed design causes side rods to work together . . . Conforms to ASTM std. A-82-34 for high tensile steel . . . 6-inch lap at splices develops continuity and maintains reinforcing strength . . . Deformed side rods for maximum bond strength.

10-foot lengths . . . 500 lineal feet per bundle

SELECTION TABLE

Wall Thickness	4 in.	6 in.	8 in.	10 in.	12 in.	13 in.
Extra Heavy Dur-O-wal	4-EH	6-EH	8-EH	10-EH	12-EH	13-EH
Wt. per 1000 lin. ft.	247 lb.	250 lb.	257 lb.	266 lb.	276 lb.	282 lb.
Standard Dur-O-wal	4-S	6-S	8-S	10-S	12-S	13-S
Wt. per 1000 lin. ft.	178 lb.	180 lb.	187 lb.	196 lb.	207 lb.	212 lb.

Furnished in either bright basic or galvanized steel. Specify Drip Section Dur-O-wal for Cavity Walls.

NOTE — In determining whether to specify Standard weight or Extra Heavy weight Dur-O-wal, comparisons in following table should be properly evaluated:

	Weight lbs. tensile steel per lin. ft	Surface bond area—sq. in. per lin. ft.	Number of mortar locks per lin. ft.
Standard weight Dur-O-wal	0.19	11.18	3
Extra Heavy Dur-O-wal	0.26	14.14	3

Butt Weld **DUR-O-WAL**® with RIGID TRUSSED Design

the Backbone of Steel for EVERY masonry wall

Phone, wire or write Dept. 3-S for additional information about Dur-O-wal

Dur-O-wal Div., Cedar Rapids Block Co., **CEDAR RAPIDS, IA.** Dur-O-wal Prod., Inc., Box 628, **SYRACUSE, N.Y.** Dur-O-wal of Ill., 119 N. River St., **AURORA, ILL.** Dur-O-wal Products of Ala., Inc., Box 5446, **BIRMINGHAM, ALA.** Dur-O-wal Prod., Inc., 4500 E. Lombard St., **BALTIMORE, MD.** Dur-O-wal Div., Frontier Mfg. Co., Box 49, **PHOENIX, ARIZ.** Dur-O-wal, Inc., 165 Utah St., **TOLEDO, OHIO**

The CONCRETE MANUFACTURER

March 1957

The New Road Program And the Concrete Industries

THE projected 13-year program for the 40,000-mile system of interstate highways, the largest in all history, connecting all states and nearly all cities of over 50,000 population, is too well known to require additional comment.

Not as well known, however, is the immensity of the hidden potential volume of concrete for the necessary appurtenant structures of the system, to be constructed at every bridge, crossover, and culvert on the primary roads, and at the intricate cloverleaf intersections of roads leading to towns and cities. All these structures, as well as the approach slabs themselves, are at points not efficiently reached by the slab-paving machines. It is this huge volume that is of particular interest to our producers of concrete, especially ready-mix.

That such producers may well profit beyond their normally limited fields in highway construction is proved by the case of a typical aggregate and ready-mix producer in Ohio. Almost the *entire output* of three of his four ready-mix plants was used to provide approximately 60,000 cu. yd. of concrete for the *structural and incidental concrete* required in only 82 miles of Ohio and Indiana turnpike, located in relatively flat terrain and in an area almost devoid of cities. This large volume would conceivably be even greater had the turnpike passed through hilly terrain or had it been adjacent to more densely populated centers.

An item of serious concern to many bidders on the new road system is a threatened steel shortage. This "other man's poison" may well prove profitable "food" to those concrete producers in position to furnish prestressed concrete structural members on crossover bridges. On 212 such bridges on the new Illinois toll roads, prestressed concrete design has been accepted by the engineers. This trend to prestressed, in competitive bidding, is already pronounced in several other states.

The participation of other concrete producers in the road program can be more definitely determined. Concrete pipe producers are well aware that their volumes depend upon the miles of concrete pavement laid, give or take more or less, in rugged or flat terrain. On the other hand, concrete block producers must wait until the completion of the new arteries afford sites for the residences and other buildings which will take a major portion of their products.

As bidding dates approach, it is highly important that each concrete producer carefully scrutinize the plans for the new road systems within the bounds of delivery from his existing plants, and consider the possible use of portable plants, so that he may furnish his product more efficiently than can others in competitive fields. A consideration of the funds available for other than the paver-laid slabs for the highway make these hidden potentials indeed startling.

Roy L. Peck

CONTROL PANEL, with 10" dial indicator. Shows at a glance the exact finish time in seconds and fractions of a second. Panel includes feed and finish time setting — and selector switch for either hand or automatic operation.

AUTOMATIC FEED CONTROL...

Another Besser Contribution to the Concrete Block Industry

YOU want all your block to be of uniform quality. Then it's important to maintain uniform finish time in producing the block. The New Vibrapac provides a visible means of controlling quality. You can actually see the seconds . . . even fractions of a second . . . consumed in vibration and the length of feed time.

The new Besser Automatic Feed Control mechanism will enable every block maker to produce BETTER block even FASTER. Get the facts! Contact your nearby Besser representative.

Here's how you benefit from the New BESSER Automatic Feed Control:

1 **Consistent Production.** The machine speed is kept constant due to automatic compensation for irregular feed or mixture control. Feeding by "guess" is eliminated.

* * *

2 **Quality Controlled Block.** Automatically adjusts amount of feed to the mold, assuring uniform finish time and high quality block.

* * *

3 **Less Material Waste.** Controls density of block. No overweight or underweight units. Every block is made to a specified predetermined amount of concrete.

4 **Less Supervision Required.** The electric brain does the "thinking" . . . controls the amount of feed for constant uniformity of all types of units. Supervisor merely checks the larger indicator dial to see that quality is being maintained.

A 6-103-1PBCR

BESSER COMPANY

First in Concrete Block Machines

Box 131 · ALPENA, MICHIGAN, U.S.A.

News of the Concrete Industries

Leo H. Corning of P.C.A. Lauds Prestressed Items At Canadian Convention

At the Canadian Construction Association convention held in Toronto recently, Leo H. Corning, director of promotion planning and engineering services for the Portland Cement Association, told of the part prestressed concrete will have in reducing costs and time in construction methods.

Mr. Corning predicted the widespread use of prestressed concrete for transmission poles and towers, and described a snow fence of 1-in. thick prestressed planks so flexible that they will deflect 8 in. under the weight of a 200-lb. man and then return to normal position undamaged. The addition of flexibility to the characterics of prestressed concrete is said to be an important advance in its development.

Another item mentioned by Mr. Corning is a composite floor or roof unit. Still in the development stage, the unit consists of prestressed planks above and below adhering lightweight concrete blocks.

"Units like this have been tested to destruction and have shown no failure in either vertical or longitudinal joints. It would appear that these planks could readily be produced by production line methods at reasonable cost," he said.

American-Marietta Outlook Called Favorable for 1957

Robert E. Pflaumer, president of the American-Marietta Company, envisions another record year for the firm in 1957, with both sales and earnings rising 10 percent over the 1957 figures. The prediction was made at the company's annual meeting in Chicago.

Shareholders were told of the company's expansion program, which this year includes four new concrete products plants and expansion projects at eight existing facilities. It was announced that American-Marietta will enter the portland cement market in the South for the first time when its expanded facilities at Roberta, Ala., go into operation early this summer.

Other new ventures undertaken by the company included a brick and tile plant in Oklahoma City and a chemical plant just completed in Edmonton, Alta. In addition, a site is being considered in Kankakee, Ill., for a chemical plant; and expansion of chemical facilities in Portland, Oreg., and New Westminster, B.C., are nearing completion.

James H. Ackerman, president of the company's Dragon Cement Company Division, was elected a director of the parent company.

Universal Concrete Pipe Div. To Construct New Facilities

Plans for relocation of present facilities in larger quarters in the Rochester area were announced by officials of the Universal Concrete Pipe Division of the American-Marietta Company, Rochester, N. Y.

The new site, located near Buffalo and Howard Roads, covers more than 20 acres, according to L. E. Barrett, plant manager. Cost of the proposed new plant is estimated at $500,000. Construction will begin on April 1, and it is expected that the plant will be completed one year later.

Associated Concrete Products, Inc., formerly located in Costa Mesa, was recently moved from that city to a new and larger plant in Santa Ana, Calif. A branch was opened in Ontario, Calif.

Coming Events

March 5-9, 1957—Washington, D.C. **49th annual convention, American Concrete Pipe Association. Shoreham Hotel.**

April 8-10, 1957—Dallas. 51st annual convention, Autoclave Building Products Association. Statler Hilton Hotel.

July 29-August 2, 1957—San Francisco. World Conference on prestressed concrete. Fairmont Hotel.

August 25-31, 1957—Murray Bay, Canada. Semi-annual directors' meeting, National Ready Mixed Concrete Association. Manoir Richelieu.

Philip Paolella Chosen To Succeed Peterson As N.C.M.A. President

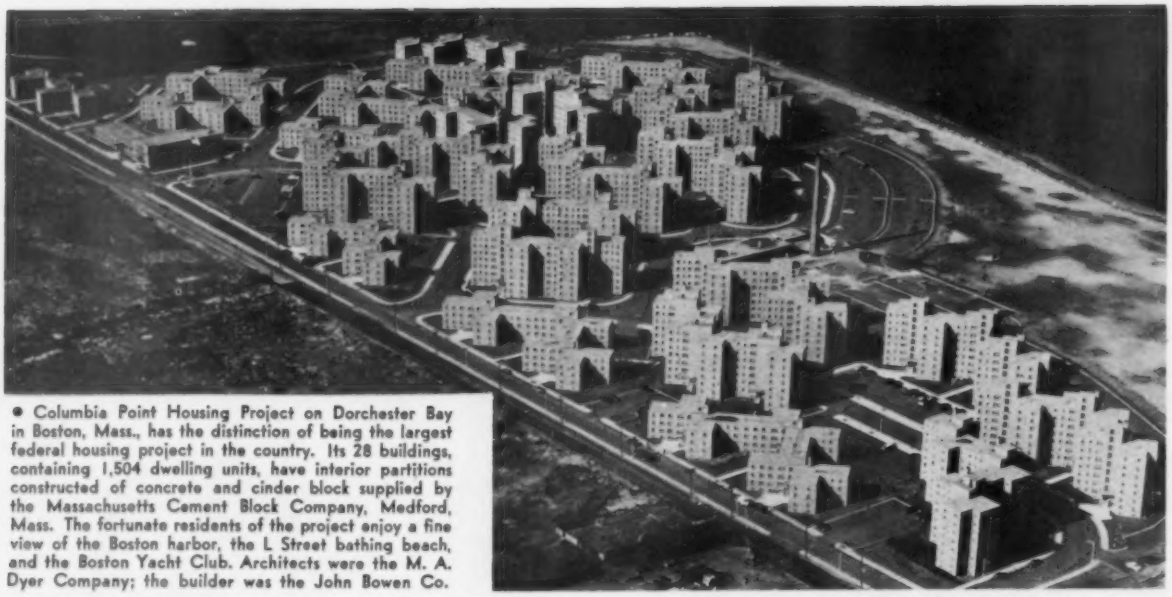
Philip Paolella, executive vice-president of the Plasticrete Corp., Hamden, Conn., has been named 1957 president of the National Concrete Masonry Association. He will succeed Earl W. Peterson, Ideal Cement Stone Company, Omaha, Nebr.

Philip Paolella

Mr. Paolella has a long and varied background in the block industry. He launched his career with Plasticrete in 1936, handling both sales and office duties; subsequently he served as an outside salesman. He was named executive vice-president in 1950.

He is a past president of the New England Concrete Masonry Association and has been a director of N.C.M.A. for 10 years. Other N.C.M.A. posts include chairmanships of both the promotion committee and the local, state and regional associations committee.

At the annual meeting of the Ohio Concrete Block Association held recently in Cincinnati, W. H. Eiblin, Lima, was elected president; V. E. Scott, Dayton, was named first vice-president; James F. Royer, Columbus, was re-elected secretary; and Clem Boals II, Springfield, was appointed treasurer.



• Columbia Point Housing Project on Dorchester Bay in Boston, Mass., has the distinction of being the largest federal housing project in the country. Its 28 buildings, containing 1,504 dwelling units, have interior partitions constructed of concrete and cinder block supplied by the Massachusetts Cement Block Company, Medford, Mass. The fortunate residents of the project enjoy a fine view of the Boston harbor, the L Street bathing beach, and the Boston Yacht Club. Architects were the M. A. Dyer Company; the builder was the John Bowen Co.

Keystone Septic Tank Co. Uses New Process To Increase Production

Development of a new process said to quadruple concrete septic tank production has been announced by William C. Shank, president of the Keystone Septic Tank Company, Indianapolis, Ind. Keystone holds the Indiana franchise for the process.

The process is based on a casting machine invented by Elwood Fry and Henry Fasenmyer, officials of the Warren Concrete Products Company, Warren, Pa.

Normally, concrete septic tanks are made by pouring wet concrete into molds of the proper size. Under the new system, less aqueous concrete is tamped and vibrated in the mold, creating a denser cast from which the mold can be stripped in a short time. Up to six tanks per hour may be produced using the Warren process—an acceleration in the casting of about 400 percent, according to Mr. Shank.

Stearns Manufacturing Co. Purchases Shawnee Assets

Sale of the Shawnee Manufacturing Company, Inc., Topeka, Kans., manufacturer of light earthmoving tools and equipment, to the Stearns Manufacturing Company, Inc., Adrian, Mich., manufacturer of concrete block making equipment, has been announced by Marion Wills, Shawnee president.

Mr. Wills, who founded Shawnee in 1952, emphasized that there will be no change in management of Shawnee. The company will continue to operate in Topeka under the same name.

The acquisition of Shawnee is expected to add an estimated $4,000,000 to Stearns' annual sales volume.

D. E. Jordan Named President Of Unit Masonry Association

Donald E. Jordan, sales manager of Layrite Concrete Products, Seattle, Wash., was recently elected president of the Unit Masonry Association. He succeeds Lloyd E. Beck.

Other officers of the organization are G. L. Gerring, vice-president, and E. J. Gill, secretary-treasurer. Carl Robertson is manager of the association. Unit Masonry Association is composed of manufacturers and suppliers of masonry products, mason contractors, and members of the Bricklayers Union.

N. J. Concrete Products Assn. Elects Officers, Directors

At the annual meeting of the New Jersey State Concrete Products Association in Ridgefield, N. J., the following officers were nominated:

President, Thomas Swales (Best Block Co.); vice-president, Fred Woitscheck (Hi-Way Cinder Block Co.); secretary, Horace W. Bush (Bergen Building Block Co.); treasurer, Andrew Reuther Jr. (Reuther Material Co.).

The following directors were nominated at the same meeting:

James Callahan (Multiplex Concrete Co.), one year; Horace W. Bush (Bergen Building Block Co.), two years; P. Pellegrino (Oliver Mfg. & Supply Co.), three years.

These men were unanimously elected to their respective posts.

Tentative Expansion Plans Of Best Block Co., Include Construction of 5th Plant

Officials of the Best Block Company, Edison, N. J., have announced tentative plans for the construction of a fifth plant at Red Bank. Best Block, considered one of the largest producers of concrete block in the east, has plants now operating in Edison, Toms River, Yardville, and Trenton.

Incorporating the most modern equipment, the newest installation will be similar in operation to the Toms River plant which is now turning out 12,000 concrete blocks per work shift.

Thomas J. Swales Jr. is president of the firm, James A. Swales is vice-president, and Thomas J. Swales Sr. is sales manager.

William E. Viall Jr. has been appointed Permanente Cement Company's sales representative for the Fresno-Bakersfield area, it was announced today by Jack Jansse, Northern California Division Sales Manager.

Since 1956, Mr. Viall was in charge of the company's sales order department at the Permanente plant.

Dale Putrah has been named manager of the Elmore Concrete Products Company, Elmore, Minn., succeeding William Agnebert who is now in charge of a new, larger concrete plant at Rochester. Both the Elmore and Rochester plants are owned by the North Star Concrete Company, Mankato.

Meditate

for a moment on the subject of...

CONCRETE LINTEL PROFITS

these Producers Did so With these Results

Kent Concrete Lintels are made of block aggregate assuring walls of uniform texture.

They are "laid up" by masons. No steel members or extra craftsmen are required. Delays are avoided and labor costs reduced.

Builders quickly see the advantages and adopt them as standard units.

Block manufacturers add a new item without increasing their sales overhead and gain a profitable market that is simply awaiting their attention.

FROM A LETTER WRITTEN TO ANOTHER BLOCK MANUFACTURER

"After a year of operation of our Kent Lintelator we have more than tripled our sales of pre-cast lintels. It makes good lintels and makes them fast.

"We highly recommend this machine and are sure you will not make a mistake in purchasing one."

MARTIN BLOCK CORPORATION
Lansing, Michigan

"We have had a Kent Lintelator in constant use for 4 years and you could not have a more delighted customer. Each year I am more pleased with the product your machine turns out as well as the high return from the investment."

ALLIED CINDER BLOCK CORPORATION
Harrisonburg-Staunton-Waynesboro, Virginia

"To meet the increased demand for lintels created by your Lintelator we enclose our order for your large machine.

"We already have two Lintelators in our Grossbeck Highway plant and one in our West Chicago plant.

"As a result of the tremendous lintel business built up we are ordering this fourth machine. Please speed it along to us."

BORIN BUILDERS SUPPLY CO.
Detroit, Michigan

The Kent Lintelator is a simple, compact machine that can be operated by any laborer.

Reenforcing bars are put in position and aggregate fed into the vibrating form. The vibrating pressure plate moves into position and brings the strong lintel to accurate dimensions.

With the pressure plate retracted the mold is rolled over and end members swung out. The front channel which serves as a pallet, is lifted by an air hoist and transferred to the curing rack.

Without exception purchasers of Lintelators are highly pleased with them—a fact that should induce you to immediately learn how you too can obtain this additional profitable business.

Clip and mail coupon for Information

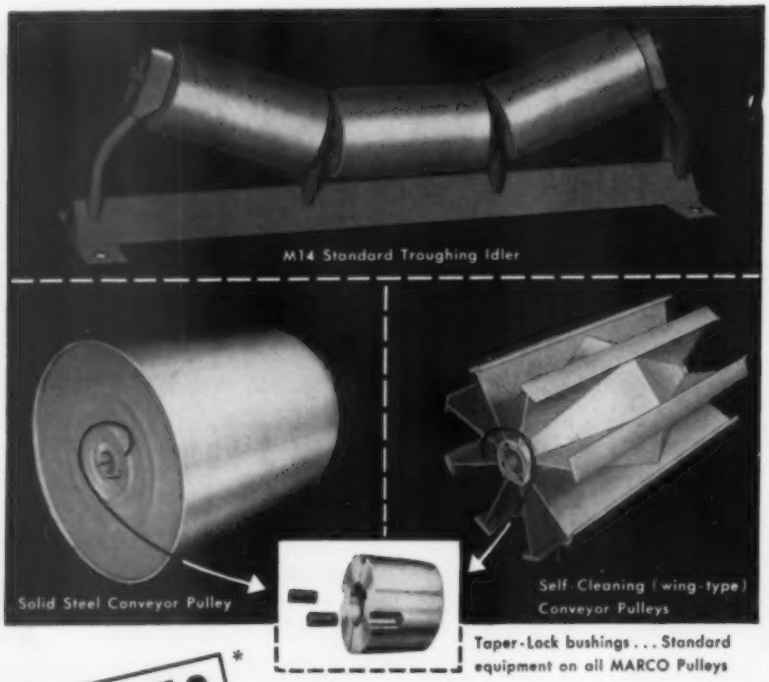
the KENT MACHINE CO. CUYAHOGA FALLS, OHIO

DIVISION OF THE LAMSON & SESSIONS COMPANY

Canadian Distributor: Wettlaufer Equipment, Ltd., 49 Merton St., Toronto 12, Ontario

I've thought it thru and want the LINTELATOR story without delay.

Company
Address
City
Att. of


M14 Standard Troughing Idler
Solid Steel Conveyor Pulley
Self-Cleaning (wing-type) Conveyor Pulleys
Taper-Lock bushings . . . Standard equipment on all MARCO Pulleys

MARCO*

The Complete Line of Modern Conveyor Accessories . . .

Engineered to Reduce Your Material Handling Costs

Belt Conveyor Idlers — You'll find MARCO engineering makes a big difference in idlers. MARCO idlers are equipped with precision ground, ball bearings. These bearings are designed specifically for conveyor idlers and at 300 revolutions per minute they will carry loads up to 860 lbs. per bearing. The result,— longer service life and lower power requirements.

Each bearing is pre-lubricated and effectively sealed to eliminate field lubrication and reduce maintenance.

The frame is stronger because of its all steel construction. Material build up is kept at a minimum due to the self-shedding base.

Idlers fit any conveyor frame and are available in many types and sizes. *Ask for Bulletin ID-2.*

MARCO Solid Steel Pulleys — Advantages of MARCO pulleys include: machined faces and Taper-Lock bushings, at a competitive price. Both the belt and pulley last longer because the entire pulley face is machined to insure concentricity with the bore. The Taper-Lock bushings provide the quickest, easiest way to mount or demount pulleys.

Self-Cleaning (wing-type) Pulleys — These self-cleaning pulleys pay for themselves many times in longer belt life when installed in elevator boot sections, conveyor tail sections and gravity take up assemblies. These pulleys are of *all steel*, jig-welded construction and also combine the advantages of machined faces and Taper-Lock bushings.

Whenever you need conveyor accessories — turn first to MARCO.

MARCO idlers and both solid steel and self-cleaning pulleys are available in a wide range of sizes for prompt delivery to meet *your* requirements.

You can save time, trouble and dollars because . . . MARCO specializes in designing and manufacturing conveyors and accessories. Get the facts from your MARCO Distributor or write E. F. Marsh Engineering Co., St. Louis 10, Mo.

MARCO*

Engineered MARCO* Products:

Tubular Frame Belt Conveyors • Conveyor Idlers
Solid Steel and Self-Cleaning Steel Pulleys • Bucket Elevators
Control Gates • Feeders • Bins

*Trademark Registered

Newly-Formed Kansas Assn. Of Ready Mix Producers Elects Officers for 1957

At a recent meeting of the newly-formed Kansas Ready Mixed Concrete Association, board members and directors for 1957 were elected and a constitution and by-laws were drawn up and approved.

Vic Baum, Great Bend, was elected president of the Association; Walt Keeler, Wichita, was named first vice-president; and O. W. Kershaw of Manhattan was elected second vice-president.

Directors for 1957 include Ed O'Dell, John Coleman, Forest E. Howell, Ralph Hunter, and Carl Engstrom. The officers were also named directors.

Charles H. Scholer, past president of the American Concrete Institute and recently-retired head of the Department of Applied Mechanics at Kansas State University, became the first honorary member to be elected to the association.

A committee formed at the meeting will meet with the chief construction engineer of the State Highway Commission to draft rules, procedures, and specifications enabling ready mixed concrete to be used in highway construction projects.

New Concrete Additive Made From Paper Mill Waste

A concrete additive which is said to reduce the amount of water necessary for preparing the mix, resulting in higher compressive strength for the concrete, has been introduced by the Marathon Corporation, Rothschild, Wis. Called Maracon, the additive waterproofs concrete and makes it better able to withstand freezing and thawing.

Maracon, made from a refined paper mill waste, will soon be available for national distribution.

Peter Verna Jr., Charlotte, N. C., co-owner of the Concrete Materials Company, was appointed chairman of the finance committee for the World Conference on Prestressed Concrete. The conference, sponsored by the Prestressed Concrete Institute and the University of California, will take place July 29-August 2, 1957, at San Francisco.

Continental Enterprises, Evanston, Ill., has been authorized to license United States firms to use a simplified method of prestressing, casting, and curing precast concrete pipe. The method was developed by Dr. Rolf Schjodt, Olso, Norway.

Stepped-up Pace of Winter Construction Sparks Demand for Hot Ready-mix

Chicago, Ill. This city experienced a tremendous winter building program. Modern steam boilers in ready-mix plants, such as Consumers Company, are big factors in helping to deliver steady supplies of hot ready-mix to both commercial and residential projects.

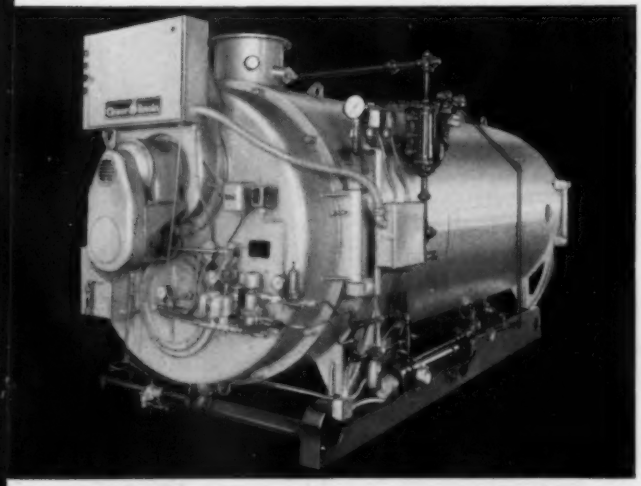
The experience of the Consumers Company is another example of how modern Cleaver-Brooks boilers can serve *all types* of industries, maintain steady supplies of low-cost steam in volume for various uses . . . and with reductions in maintenance expense.

Cleaver-Brooks Company offers owners, engineers and architects complete assistance in any and all boiler modernization programs.

Four Cleaver-Brooks boilers supply steam in volume at low cost . . . boost output at Consumers Company

At Consumers Company's Hillside, Ill., plant it was noticed that there was an improvement in efficiency and lower operating cost after installation of the new 150-hp Cleaver-Brooks packaged boiler. Since it is automatic, the boiler requires a minimum of attention. It supplies adequate steam at between 20 and 40 lbs. for all winter operations at this plant, and that includes heating sand and water for operating readiness at all hours.

Consumers Company now owns *four* Cleaver-Brooks 150-hp boilers. All replaced older boilers in four plants located in the greater Chicago area.



Model CB boiler has complete unit approval — labeled by Underwriters Laboratories and Canadian Standards Assn.

Heats 5000 tons of sand

At the Hillside plant, roughly 5000 tons of sand (pile is 30 feet high) are heated with steam. Steam from the 150-hp CB boiler fed through feeder lines also heats all water used by the plant. Air on truck controls mixture and helps agitate the mix on way to job.

America's most modern boiler line

Pictured here is the Model CB boiler installed at Consumers Company — one of 19 sizes, 130 models in the 15 to 600 hp range. Cleaver-Brooks boilers, with their four-pass, forced-draft design and automatic programming of operation from low to high fire, assure 80% efficiency on both oil and gas fuels. Hinged and davited doors simplify tube cleaning and maintenance. Truly America's most modern boiler — efficient, safe and built for years of dependable hot water and steam service.

Write for details. Cleaver-Brooks Company, Dept. C, 347 E. Keefe Ave., Milwaukee 12, Wisconsin.

Cleaver Brooks

ORIGINATORS OF SELF-CONTAINED BOILERS

How job site batching with supplier $920,000 contract of 5 stationary plants

On the southern outskirts of San Francisco above San Bruno is a 5000 acre hillside area of new subdivision and shopping center construction. 6 ready-mix suppliers were in position to bid on the contracts: 5 stationary plant operators and Cupertino Concrete Co., the one Noble-Mobile batching plant on wheels operator. Cupertino was able to take the job at a price 8% below the nearest competitor yet make a profit averaging 6%. By driving his Noble-Mobile to the job site and producing there, Cupertino reduced transit truck hauls to a maximum of 2 miles and saved over 50% on hauling costs. Each Cupertino transit truck works an average of 6 hours a day making up to 12 trips of 5 yards per trip, totaling 60 yards of concrete per day per truck. 60 yards supplied from the nearest competitive stationary plant would have required 2 to 3 trucks. Cupertino saves up to 8 transit trucks.

When the job started in August, 1954, Cupertino located the Noble-Mobile in the center of the first project so the maximum haul would be only 1 mile. On completion of that project and the beginning of another project 1.5 miles distant, Cupertino closed shop on a Friday night and by the following Monday morning had dismantled, moved and reassembled the Noble-Mobile in the new location and was delivering concrete. The cost of setting up the Noble-Mobile in the new location was a mere fraction of what it would have been to install a stationary plant. Saved were the weeks and even months wasted in cutting through legal red tape to secure permits and complete construction. A further source of profit is the do-it-yourself residents of the newly completed homes.

Batching plant on wheels driven to the job site saves erection costs, taxes, site availability problems. Purchase is easier to finance than stationary plants. Pays for itself in savings from shorter hauls. Saves outlay for extra transit trucks and cost of depreciation. Many producers maintain one or more Noble-Mobiles in reserve to handle sudden surges of business and to discourage competitors from stepping in.

Pouring site on 16 per cent grade 1.9 miles below Noble-Mobile plant. Arrow points to closest stationary plant 3.4 miles distant. Noble-Mobile was stationed above construction area so all hauls would be downhill. Competitors had to compute costs on slow, ponderous up-hill drags.

Concrete for 10,000 homes in a 10 year building program! $35,000 Noble-Mobile batching plant, located 2 miles above, supplies concrete for foundations, sidewalks, retaining walls, driveways, patios.

NOBLE-MOBILE Batchmobile

Covered by patents pending

WRITE FOR CIRCULAR

THE NOBLE COMPANY • 1860-7TH ST., OAKLAND 20, CALIF. • TEMPLEBAR 2-5785

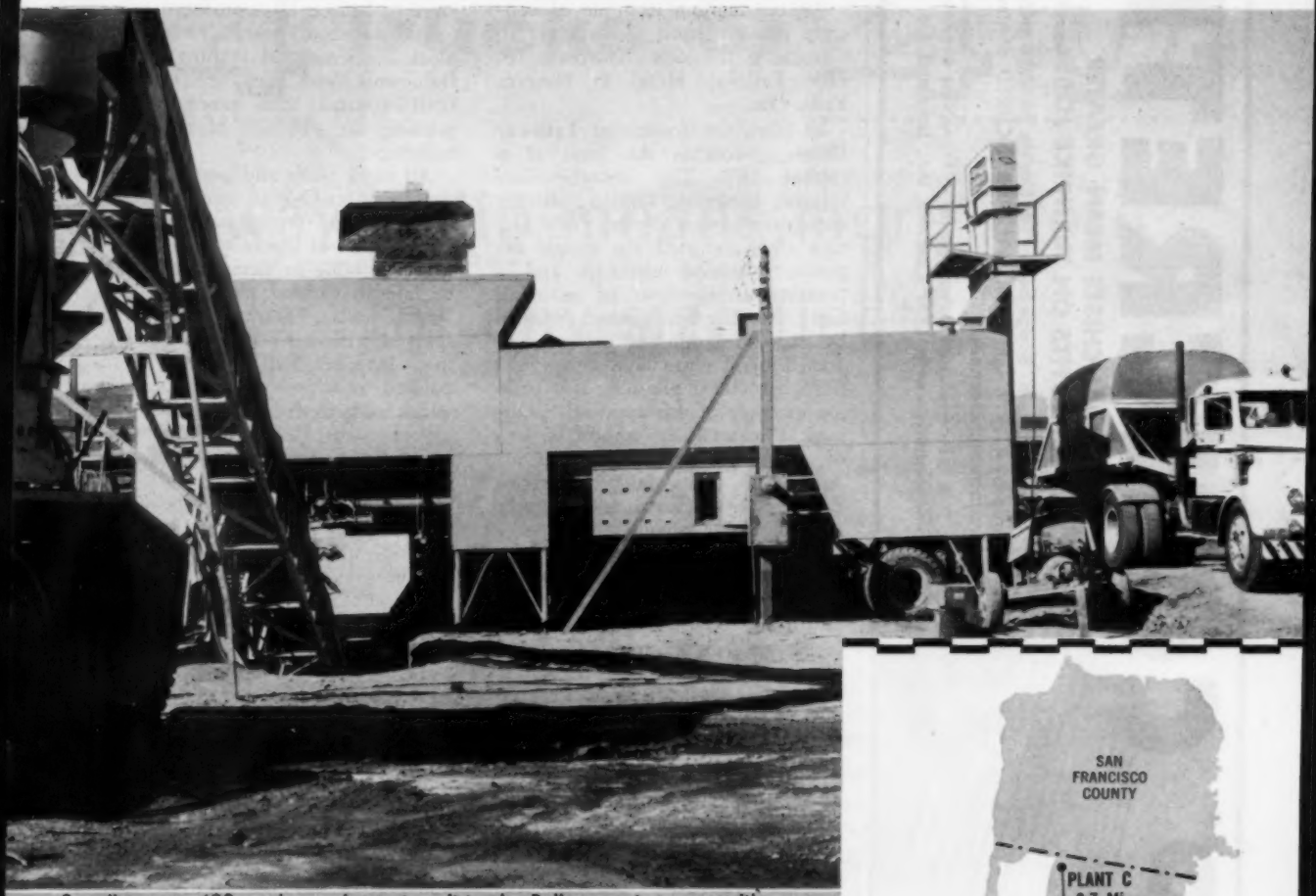
Branches: 20950 Center Ridge Road, Cleveland 16, Ohio. EDison 1-3426

518 First Ave. North, Seattle, Wash. MUtual 4878

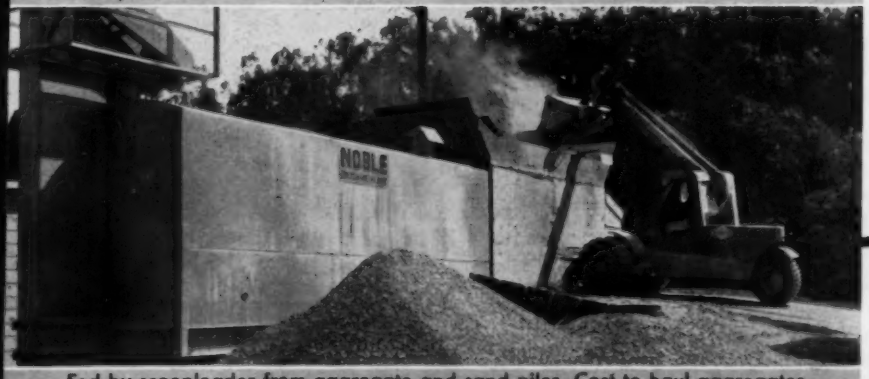
218 Richmond St., El Segundo (Los Angeles), Calif. EAstgate 2-4518

International Sales Agent: Frazar International Corp., San Francisco

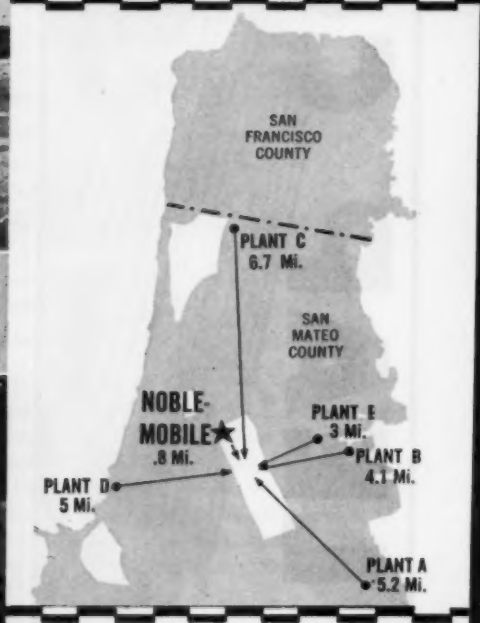
NOBLE-MOBILE got concrete at 6% profit against bids



Supplies up to 400 yards per day to transit trucks. Bulk cement storage with truck hopper unloading screw and elevator. Weighs aggregates and cement separately and simultaneously. Automatic or semi-automatic control. Set up in 1 day. No field wiring, concrete foundations or crane time required on base plant.



Fed by scooploader from aggregate and sand piles. Cost to haul aggregates, sand and cement from producing site to Noble-Mobile no more than to haul to general area where competitors' stationary plants are located. Plant may also be fed by conveyor or crane.



Map of construction areas south of San Francisco showing Noble-Mobile site and competitors' stationary plants — A, B, C, D, E. Note the .8 mile haul from the Noble-Mobile compared with the up to 6.7 mile hauls from the others. "Economics of job-site batching are so sound no outside stationary plant can compete," reports Bob Soldini, Cupertino Concrete Company.

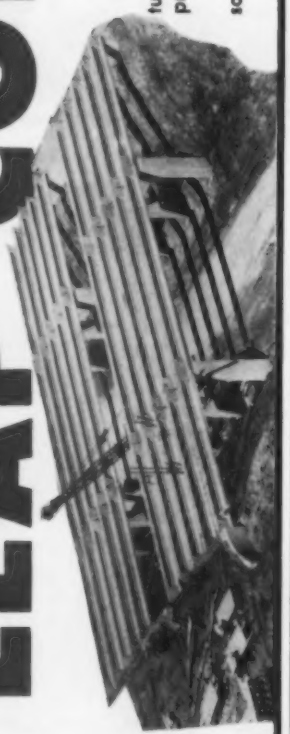
DISTRIBUTORS: BIRMINGHAM, ALA., Equipment Service Co. • PHOENIX, ARIZ., Superior Equipment Co. • VANCOUVER, B. C., Westcoast Equipment Co., Ltd. • DENVER, COLO., Western Machinery Co. • BALTIMORE, MD., General Supply & Equipment Co., Inc. • CEDAR RAPIDS, IOWA, James W. Bell Co. • INDIANAPOLIS, IND., Manwaring Machinery Co. • DETROIT, MICH., R. G. Moeller Co. • ST. PAUL, MINN., Borchert-Ingersoll, Inc. • CLEVELAND, OHIO, Wepco Equipment Co. • LOS ANGELES, CALIF., Smith-Booth-Usher Co. • PORTLAND, ORE., Clyde Equipment Co. • PHILADELPHIA, PA., Furnival Machinery Co. • PITTSBURGH, PA., Equipment & Supplies, Inc. • AMARILLO, TEXAS, Plains Machinery Co. • DALLAS, TEXAS, North Texas Equipment and Supply Co. • HOUSTON, TEXAS, Boehck Engineering Co. • EL PASO, TEXAS, Border Machinery Co. • WACO, TEXAS, Richards Equipment Co. • SAN ANTONIO, TEXAS, Contractors Machinery Co. • SALT LAKE CITY, UTAH, Arnold Machinery Co. • SEATTLE, WASH., Star Machinery Co. • SPOKANE, WASH., Intermountain Equipment Co. • CASPER, WYOMING, Studer Tractor & Equipment Co. • MONTREAL, QUE., Laurentide Equipment Co., Ltd. • WINNIPEG, MAN., Huggard Equipment Co., Ltd. • BOSTON, MASS., Hodge & Matthois Co. • LOUISVILLE, KY., Emmett C. Watson Co. • NASHVILLE, TENN., Peterson Machinery Co.

LEAP® CONCRETE

FRANCHISES MEAN GREATER PROFITS ON TURNPIKE JOBS!

Shown at Left: Bridge beams for Florida Turnpike manufactured by R. H. Wright & Son, a LEAP FRANCHISED prestressed products manufacturer.

You too can share in these profits -- Franchises available in some localities - write LEAP Concrete, Inc., Lakeland, Fla.



FREE—

LEAP Concrete, Inc. P. O. Box 1053
Dept. A-13, Lakeland, Florida
Send information about LEAP Prestressed Products; Franchise ☐, Double Tee ☐, Joists ☐, Beams ☐, Piling ☐
NAME _____
ADDRESS _____
CITY _____ STATE _____
I am an: Architect ☐, Engineer ☐, Contractor ☐ We are interested in a LEAP FRANCHISE ☐

Concrete Masonry Units Form Structure, Decor Of Canadian Resort Hotel

An outstanding example of concrete masonry unit construction in Canada is the new 108-room, 16-suite Fallsway Hotel in Niagara Falls, Ont.

In plan, the completed Fallsway Hotel approaches the form of a capital "F". The branches are splayed, horseshoe fashion, offering each unit a view of the Falls. Design elements used are simply exposed structural elements and a pleasing arrangement of materials and color. The dining room, spanned by exposed laminated arches, supported by Thoro-Clave lightweight units, structural pilasters, is a striking example of this approach to design. Two walls are almost entirely of glass—the remaining walls are lightweight units laid in striking patterns and painted to harmonize with the color scheme.

The two story hotel proper has a structural framework of reinforced concrete, housed in pilaster blocks and beam lintel blocks. The pilaster blocks, each in the form of a round cornered rectangel, 18½ in. square, are stacked vertically, becoming permanent forms for the poured reinforced concrete column which they encase. U-sectioned lintel blocks are laid horizontally on wood shoring which was later removed. Reinforcing steel is placed and the block trench is then filled solid with concrete to form a block-surfaced reinforced concrete beam. These two block elements add texture to the framework and they are exposed both externally and internally, expressing the structure of the hotel buildings.

All block walls and partitions are exposed. Dur-O-Wall steel reinforcing was used throughout in every other course of blocks on 16 in. vertical centering so that blocks could be laid in varying patterns in different walls. Exterior walls were sprayed with a silicone waterproofing. Interior wall surfaces were painted to achieve a velvety texture which adds to the decor of the individual rooms. Bathrooms have walls entirely of Spectra-Glaze glazed masonry units.

The floor system is of "Flexicore" slabs surfaced with a thin layer of concrete over which is laid wall to wall carpeting. The underside of the "Flexicore" slabs was sprayed with "Masticote," thus adding texture to a ceiling which reveals the structural lines of the panels.

Although the masonry work forms the majority of both structure and decor, its cost was less than 10 percent of the total building cost.

Canadian Block Producers Report 1955 Net Profits

Schell Industries, Ltd., Woodstock, Ont., Canada, manufacturer of concrete blocks, celocrete blocks, ready mixed concrete, sills, lintels, and other precast products, reports a net profit of $27,288 for the year ended October 31, 1955, an 11 percent increase over the previous year's total of $24,574. Results for the year ended October 31, 1956, are not yet available.

A net profit of $93,798 for the year ended October 31, 1955, has been reported for National Sewer Pipe Ltd., Toronto, Ont., and its subsidiary, National Concrete Products. This is a decrease from $118,137 for the year ended October 31, 1954. Figures for 1956 have not yet been released.

For the year ended July 31, 1955, profits of the Edmonton Concrete Block Company, Edmonton, totaled $105,592. Estimated net profit for the year ended March 31, 1957, is $142,000, compared with a net profit of $41,096 for the eight months ended March 31, 1956. The fiscal year has been changed to end March 31 from July 31.

Texas Concrete Masonry Assn. Plans Membership Meeting

The annual Spring Membership Meeting of the Texas Concrete Masonry Association will be held on April 11-12, 1957, at Austin, Tex.

Nolan Browne Sr., Nolan Browne Company, Dallas, will take over the presidency of the Association at the meeting, succeeding Ervin Hahn, Atlas Building Products Company, El Paso. Harold M. Dodds Jr., Texarkana, will replace Mr. Browne as secretary-treasurer of the group.

Directors-elect are William F. Smith, Black-Brollier Company, Houston, and Floyd L. Carmichall Sr., Western Builders Supply Company, Fort Worth.

The Association invites all producers, suppliers, and trade publication representatives to attend the meeting to be held at the Terrace Motor Hotel in Austin.

4 trucks or 40

2-way radio means more profit for any size fleet!

If you've thought 2-way radio was only good for the big ready-mix operator with dozens of trucks—take a look around. Some of the most enthusiastic radio users have fleets of fewer than 10 mixers.

It isn't the number—it's the *efficiency* that tells the profit story. Radio dispatching helps you run trucks at peak productivity by trimming out the wasted miles and minutes.

Check these ways a Motorola 2-way radio communication system can save you money and bring in new business:

- ***By rerouting mixers, when necessary, to alternate customers—on short notice, while trucks are en route.***
- ***By freeing your heavy trucks from partial loads.***
- ***By releasing pre-mix plant crews immediately following the day's final pour.***
- ***By slashing down-time on disabled mixers through speedy repairs.***
- ***By giving better service to contractor customers via radio relay of instructions.***
- ***By eliminating all telephone calls from drivers.***

When you are buying radio, you'll soon see why ready-mix companies choose Motorola *more often* than all others *combined*. One big reason is that it's built for rugged use—designed to *outlast* several trucks. Let a Motorola Engineer show you the many other reasons why Motorola tops the field. He'll also show you how Motorola 2-way radio will quickly pay for itself by cutting costs . . . then go on to earn extra profits for you every year. Write, phone, or wire TODAY.

MOTOROLA

2-WAY RADIO

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.
A SUBSIDIARY OF MOTOROLA, INC.
4501 AUGUSTA BOULEVARD • CHICAGO 51 ILLINOIS

Motorola consistently supplies more mobile and portable radio than all others combined.
Proof of acceptance, experience and quality.
The only COMPLETE radio communications service—specialized engineering . . . product . . . customer service . . . parts . . . installation . . . maintenance . . . finance . . . lease.
"The best costs you less—specify Motorola."

N.R.M.C.A.-N.S.G.A. Chiefs Named at Joint Convention Held in Los Angeles, Calif.

At the joint convention of the National Ready Mixed Concrete Association and the National Sand and Gravel Association held in Los Angeles last month, the two organizations elected their officers for the new term.

John W. Roberts of Richmond, Va., was elected president of N.R.M.C.A. Mr. Roberts, who succeeds Robert Mitchell of Los Angeles, was formerly vice-president of the association.

Other N.R.M.C.A. officers elected for one-year terms are M. Eugene Sundy, Albuquerque, N. M., and F. E. Schouweiler, Fort Wayne, Ind., vice-presidents; and John B. Donovan, Springfield, Mass., treasurer.

N.S.G.A. re-elected Roy E. Weaver, Lincoln, Ill., president for a second term. The group also re-elected E. Phil Gemmer, Houston, Tex., vice-president, and E. K. Davidson, Pittsburgh, Pa., secretary-treasurer.

Details of the convention will appear in the April and May issues of *The Concrete Manufacturer*.

Theodore A. Bates, proprietor of the Anchor Concrete Step Company, Decatur, Ill., was elected president of the Unit Step Manufacturers Association at the national convention.

SHAKE CLEAN FAST

WITH THE

NATIONAL Car Shaker

Patented

- Soon pays for itself
- Keeps your men out of R R cars
- Simple one-man operation
- Quickly and easily installed in your plant

Write for a list of users in your area

National Conveyor & Supply Company

348 N. Harding Ave. Chicago 24, Illinois

A. E. Jenkins Appointed Concrete Division Manager Of Evans Coleman & Gilley

A. E. Jenkins

At Vancouver, B. C., the appointment of A. E. Jenkins as manager of the Concrete Division was announced recently by William F. Foster, executive vice-president of Evans Coleman and Gilley Bros., Limited, and subsidiary companies.

In his new post, Mr. Jenkins will direct co-ordination of sales and production of the firm's True-Mix concrete operations. This concern is one of the leading ready-mix producers of Canada.

Supercrete Industries Opens Block Plant at Mandan, N. D.

Supercrete Industries, Inc., has constructed a plant at Mandan, N. D., for the production of lightweight (Haydite) and regular concrete block.

New equipment installed includes an automatically-controlled Besser Vibrapac which can produce up to 1,000 blocks per hour, and can turn out over fifty types of standard building blocks.

According to Lindley H. Patten, general manager of Supercrete, expansion into the production of other concrete members, such as prestressed beams and columns, at the Mandan plant is anticipated.

Edward E. Mance has been promoted to the position of manager of the Special Products Sales Department of the Carter-Waters Corporation, Kansas City, Mo., according to a recent announcement released by Albert R. Waters, president of the firm. Mr. Mance, who has been with Carter-Waters since 1952, fills the vacancy created by the retirement of George W. Kulhavy.

Hubert L. Gerstnecker, an American field engineer hired by the Soviet Government to supervise the construction of the Dneiper Dam in 1928-30, died recently at his home in Cleveland, Ohio. In more recent years he was an engineer for the White House Concrete Company of Cleveland.

...lets one man handle work you'd pay a crew to do!

By putting new efficiency, safety and positive control into the hands of Towmotor lift truck operators you enable them to do a *bigger day's work, easier.* You let each one handle jobs you'd normally hire a *gang* to do.

Through modern Towmotor mass-handling each operator has the power to improve your profit picture, because the new Towmotor fork lift trucks multiply their productivity. Look over the new features that operators like best about our latest models—such as:

- New planned-comfort design
- Off-center adjustable seating
- Double action hydraulic tilt
- Newly-improved power steering
- "3-second access" to engine
- Famed 12" reach for all controls

Before you decide on your next fork lift truck, we urge you to get all the facts on the newly-designed Towmotor units. Write to Towmotor Corporation, Cleveland 10, Ohio, today and ask for our new illustrated lift truck booklet—No. SP-23.

Leaders for 38 years in building Fork Lift Trucks, and Tractors

TOWMOTOR ® THE ONE-MAN-GANG — GERLINGER

Gerlinger Carrier Company, Dallas, Oregon, is a subsidiary of Towmotor Corporation, Cleveland, Ohio

Concrete Material Studied With X-Ray Diffraction By Corps of Engineers

Better-quality and lower-cost concrete is the aim of a study recently launched at Jackson, Miss., by the Waterways Experiment Station of the Army Corps of Engineers with the aid of X-ray diffraction, the "electronic detective" of research.

The study is being undertaken for the Office, Chief of Engineers, with particular emphasis on the quality and cost of concrete used in the Civil Works Program.

Studies by other agencies, including the Bureau of Reclamation laboratories at Denver, Colo.; the Portland Cement Association Fellowship at the National Bureau of Standards in Washington, D.C.; and the Kentucky Highway Department Research Laboratories at Lexington, Ky., have indicated that the use of X-ray diffraction methods can be a powerful tool in identifying, classifying, and understanding the properties of materials used in concrete construction.

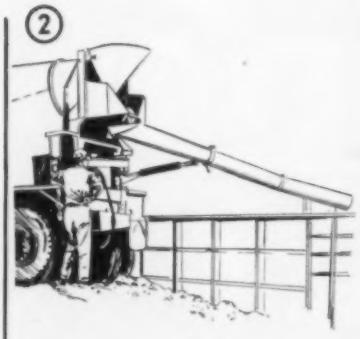
The apparatus which has been obtained is the latest model XRD-3 developed by the X-Ray Department of the General Electric Company, Milwaukee, Wis., and is designed to be used either for making photographic records of X-ray diffraction patterns or for the direct recording of diffracted rays on a strip chart.

The installation at the Waterways Experiment Station includes all the facilities needed to prepare photographic records. One valuable characteristic of the apparatus is the fact that very small samples weighing only a few hundred-thousandths of an ounce are used to obtain the diffraction data. This permits the selection of tiny portions of very fine grained materials such as admixtures for concrete, cements, hydrated cements, and clays for study. Some of these materials cannot be satisfactorily studied and identified by microscopic or chemical methods.

Col. H. J. Skidmore is director of the Waterways Experiment Station, Herbert K. Cook is chief of the Concrete Research Division, and Mrs. Katharine Mather is Chief of the Petrography Section of the Concrete Research Division in which the apparatus has been installed and will be used.

How to Win Contractors and Influence Profit!

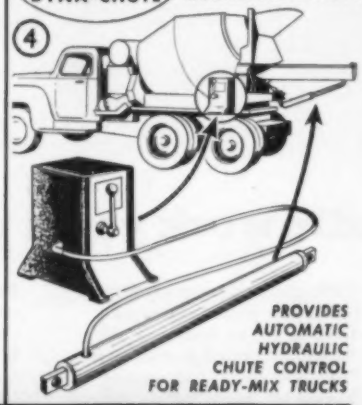
Hello, Ready-Mix? How soon can you start delivery? We've got to make up some lost time!



Operator: These Dyna-Chute units certainly speed deliveries — and I can handle the job all alone, too!

Good work, Pete, you're back early. That's the kind of service that keeps customers happy!

MONARCH DYNA-CHUTE SAVE WORK INCREASE PROFIT



PROVIDES AUTOMATIC HYDRAULIC CHUTE CONTROL FOR READY-MIX TRUCKS

SEND FOR FREE FOLDER

MONARCH ROAD MACHINERY CO. 1856 100 YEARS 1956

1331E MICHIGAN ST., N.E. — GRAND RAPIDS 3, MICHIGAN

Wisconsin Firm Expands Pipe Facilities, Truck Fleet

Officials of the LaCrosse Concrete Company, LaCrosse, Wis., have announced that the firm will add pipe manufacturing equipment during 1957, at a cost of $50,000 to $75,000. In addition about $13,000 will be spent for trucks.

During 1956 the company spent $23,400 for ready-mix trucks and $25,000 for ready mixed concrete equipment. The plant is already producing sewer pipe.

Frederick R. Lang, secretary of The Cunard-Lang Concrete Company, Columbus, Ohio, has been elected president of the Columbus Concrete Block Association. Nathan C. Gorenstein, vice-president of the Marble Cliff Concrete Products Company, was named vice-president, and John F. Royer was re-elected secretary.

According to an announcement by N. S. Rini, manager of the Lancaster, Caiif., plant of the National Ready Mix Concrete Company, a new plant will be established by this firm in Mojave, Calif.

R. E. Francis, president of Reading Concrete Products, Inc., Cincinnati, Ohio, was elected to the board of trustees of the Ohio Concrete Block Association at the group's annual convention in that city.

3 REASONS WHY...

Block delivery is handled so effectively at Ohio plant of the CLEVELAND BUILDERS SUPPLY CO.

PARTIAL LIST OF SATISFIED USERS

Alico Concrete Products Co., Inc.
Patchogue, L. I., New York—2 units

The Ideal Builders Supply and Fuel Co.
Cleveland, Ohio—2 units

Binkley and Ober, Inc.
East Petersburg, Pa.—2 units

The Michigan Silo Company
Peoria, Illinois—3 units

Joseph M. Ripley, Inc.
Jacksonville, Florida—3 units

Carter's Concrete Block Plant
Monticello, Indiana

M. L. Dague Company
Muncie, Indiana

Pick's Pack-Hauler
Blue Hill, Neb.

The Fairlawn Supply & Coal Company
Akron, Ohio

Concrete Masonry Corporation
Elyria, Ohio—6 units

Fizzano Brothers, Inc.
Crum Lynne, Pennsylvania

Maule Industries, Inc.
Miami, Florida—2 units

Putnam Mason Supplies, Inc.
Carmel, New York

Peoria Concrete Construction Company
Peoria, Illinois

Nitterhouse Concrete Products
Chambersburg, Pennsylvania

Bestone Incorporated
Chardon, Ohio

The Plasticrete Corporation
New Haven, Connecticut—2 units

Columbia Concrete Products Co.
Des Moines, Iowa

Park Avenue Cement Block Co., Inc.
Cranston, Rhode Island

Adolf Jandris and Sons, Inc.
Gardner, Massachusetts

Daggett's Concrete Products
South Haven, Michigan

Polyock Brothers
Zenda, Wisconsin

Atlas Concrete Products, Inc.
Flint, Michigan—2 units

David Concrete Products Company
Jacksonville, Florida—2 units

Carl Krebs
Fort Thomas, Kentucky

New Castle Duntile Company
New Castle, Pennsylvania

Foster Builders Supply Company
Port Huron, Michigan

Lima Cement Products Company
Lima, Ohio

Gorr Block and Supply
Greenock, Pennsylvania

3 SIDE-O-MATIC UNLOADERS *insure superior performance for*

- **SPEED OF UNLOADING**
- **CONTINUOUS SERVICEABILITY**
- **ECONOMICAL OPERATION**

Cleveland Builders Supply Company is enthusiastic about the advantages obtained with their SIDE-O-MATIC Unloaders.

Profit-boosting SIDE-O-MATIC features permit fast, easy unloading anywhere, even on sloping ground, or in one position of the truck. The units function perfectly in all weathers. Labor turnover and maintenance cost are reduced to a new low.

Check the benefits, and *you* will handle blocks the modern, SIDE-O-MATIC way!

Pat. Nos. 2,772,794 and 2,772,795

Full details sent on request

SIDE-O-MATIC UNLOADER CORP.

P. O. BOX 1561 Phone York 7357 YORK, PA.

COMMENT
from the
BUTLER ENGINEER

Of a Revolution in Concrete Paving!

Never, no never have we seen the excitement and intense interest shown at the Road Show in the new Butler TX-4 Road Builders Plant. Our deep thanks to every one who visited the Butler Exhibit!

The TX-4 is an entirely new concept in absolutely unprecedented heights of concrete production — designed greatly to *accelerate* the Multi-Billion Dollar Highway Program.

Planning for concrete paving has been generally concerned with batching facilities to match two dual drum pavers — *but the Butler TX-4 will easily handle FOUR!* . . . even more if batch trucks can keep up.

The contractor's entire approach to paving will be seriously re-evaluated in the light of the Butler TX-4. Costs will be drastically cut . . . and so will paving schedules.

The TX-4 apart from its gigantic batching capacity is ultra portable. No other plant approaches it in dismantling, shipping and erection simplicity.

The TX-4 is completely automatic — batches 4 batches each of 2 sizes of stone, 4 batches of cement and 4 batches of sand — simultaneously — and with ONLY ONE OPERATOR!

But is the TX-4 only for the large contractor? Most emphatically, "No!" The contractor with just one paver can buy the Basic Unit *at less cost than conventional one-paver plants.* Just 2 bins (one compartmented for coarse and fine stone and the other for cement and sand).

So whether you're big or not, the BUTLER TX-4 is *your* plant. It can be made to meet every production requirement —one paver, two, three or four.

You start moderately — and grow with BUTLER.

The Butler Engineer

BUTLER BIN COMPANY
WAUKESHA, WISCONSIN

Wisconsin Block Producers Hold 37th Annual Meeting

A. W. Devos, executive secretary and treasurer; Cecil Hemstock, president; Claude Murphy, first vice-president; Elvin Atkinson, second vice-president; and Ray Minette, promotion chairman.

The 37th Annual Convention of the Wisconsin Concrete Products Assn., held January 16 and 17 at the Plankinton Hotel in Milwaukee, was one of the most interesting meetings of the group, according to the more than 160 producers, guests, and representatives of allied firms who attended the meeting.

R. E. Copeland, director of engineering, National Concrete Masonry Association, discussed association activities. He showed slides of the proposed new N.C.M.A. office and laboratory building.

John R. McDonald, A.I.A., Racine, criticized the plans of the proposed N.C.M.A. building. He disapproved of the design, which he claimed would not enhance the product the association is trying to promote—concrete masonry. He declared that concrete block makes a better building than many other types, and decried the fact that some architects seem to want to "cover up" the use of block with fancy decorations and ornamentation — "as if the block weren't good enough!"

Maynard W. Meyer, A.I.A., Milwaukee, agreed with Mr. McDonald that too many people try to hide the good qualities of block. He stated that this tendency stems from the poor use made of block years ago, when cracks seemed to show up inevitably in concrete masonry walls. He pointed out that in some communities no homes are permitted to be built with exposed concrete block, and urged that the association should try to have such restrictions repealed locally.

Mr. Meyer said that he prefers natural aggregates, and feels that the use of dyes falsifies the material. He also believes that block should be brought to the job palletized, and that it should be handled more carefully.

C. E. Lovewell, Chicago Fly Ash Company, gave an interesting slide presentation on the construction of a concrete masonry swimming pool.

Other talks included the following: *The Block-O-Rama,* by Felix R. Wierman, Portland Cement Association, Milwaukee; *Co-ordinating Association Activities,* by Ray Minette, Berthelet Fuel & Supply Co., Milwaukee; *Precast Floor and Roof Construction,* by Professor O. Neil Olson, Marquette University.

A panel discussion on poured *versus* block basements followed. It was stated that a survey showed a failure of block basements of less than 0.5 percent. The following possible recommendations proposed by the committee were discussed by William Menard, Economy Block Co., Milwaukee:

1. Eliminate the use of all 8-in. units in exterior basement walls.
2. Follow the State of Wisconsin Building Code Order 5309-4, in regard to lateral support.
3. Reinforce all walls with approved horizontal reinforcement every third course.
4. Brace all walls before backfilling and keep braces in place until one week after backfilling.
5. Use fill over drain tiles to prevent plugging and to accelerate drainage.
6. Allow the minimum of one week between erection of wall and backfilling.

Robert Burmeister, City of Milwaukee Testing Laboratory, mentioned rumors of a crusade for a restricted code to be adopted by the City of Milwaukee, wherein only

poured basements would be allowed.

Cecil Hemstock, Hemstock Bros., Sparta, Wis., succeeds Carl Thompson, Thompson Concrete Products Co., Kenosha, as president. Other officers elected were as follows: first vice-president — Claude Murphy, Valley Concrete Products Co., Wisconsin Rapids; second vice-president —Elvin Atkinson, Atkinson Block Co., Waukesha; executive secretary and treasurer—A. W. Devos, Devos Block Co., Milwaukee; promotion chairman — Ray Minette, Berthelet Fuel & Supply Co., Milwaukee.

New directors elected include Fred Yahr, West Bend Concrete Products Co., West Bend; Paul Jensen, Jensen Waylite Co., Racine; and Elvin Atkinson, Atkinson Block Co., Waukesha.

Members voted to hold the 1958 convention in Madison.

The convention came to an eventful closing with the annual banquet, which was attended by more than 225 members and guests.

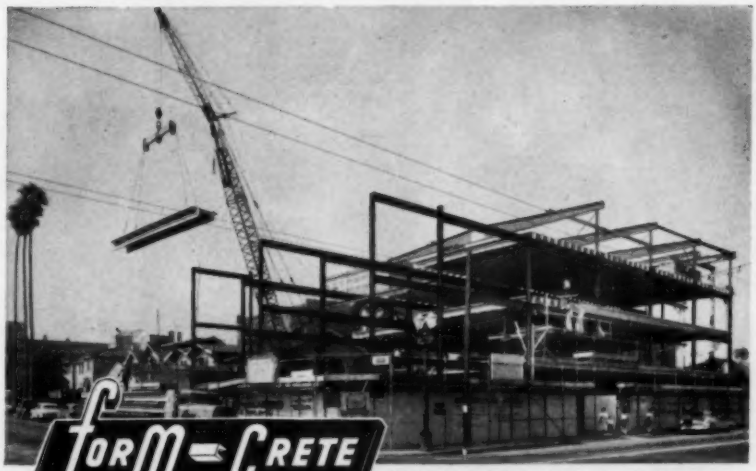
Concrete Tie & Anchor Distributor for Neutralizer

Concrete Tie & Anchor Company, Los Angeles, Calif., has been named exclusive distributor in southern California for the Ashford formula by the Alkali Neutralizer Company, Glendale, Calif.

This formula neutralizes alkali in concrete, and by bringing about a chemical change it reportedly makes it up to 27 percent harder than normal concrete. The formula also is said to cure the concrete by sealing the surface so thoroughly that the escape of moisture is retarded.

Earl Christensen, Christensen Concrete Products Company, Grand Island, Nebr., was elected president of the Nebraska Concrete Masonry Association at the organization's 11th meeting, held recently at Fremont. Mr. Christensen succeeds Dwain B. Kirk, who became first vice-president. Other officers include the following: Warren Larson, second vice-president; B. D. Osterloh, executive secretary; and Norman Moe, treasurer.

On March 29 and 30, 1957, the Concrete Products Association of Washington will hold its annual spring meeting at Spokane. Guest speakers will discuss both technical problems and business administration at meetings to be held by concrete block and pipe manufacturers.



STEEL FORMS

CUT BUILDING COSTS IN CALIFORNIA

...with prestressed concrete double T slab floors, ceilings and roofs!

Southern California's phenomenal growth coupled with the nationwide increasing building costs prompted Rockwin Prestressed Concrete Corporation to investigate and install FORM-CRETE double T casting forms in their Norwalk plant to provide needed construction savings in the area.

The building illustrated is one of several in the Los Angeles area designed by architectural associates Jack H. McDonald and Cejay Parsons (one of Rockwin's many customers) utilizing economical prestressed double T concrete slabs for floors, ceilings and roofs.

We, the Florida Division of FMC, are pioneers in the engineering, design and fabrication of prestressed concrete poured-in-place and semi-portable flat-bed steel forms for producton line casting of every type of prestressed construction product. In addition, we offer a free engineering and design consultant service for your steel form needs in custom fabrication on specialized projects.

Investigate the highly profitable new market in the prestressed concrete product field with its unlimited applications...write, wire or phone today—get into the prestressed concrete business now with FORM-CRETE steel casting forms!

FORM-CRETE DOUBLE T ALL-STEEL CASTING FORMS—By utilizing a variety of grout forms and stem heights any ingenious manufacturer can easily surpass the 37 individual prestressed concrete castings that we conservatively estimate may be produced from this one all-steel, semi-portable flat bed form assembly.

Send for **BULLETIN 200**

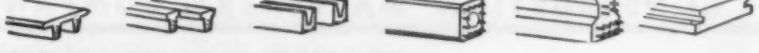
PF-7

fmc

FOOD MACHINERY
AND CHEMICAL CORPORATION
FLORIDA DIVISION
● *LAKELAND, FLORIDA*

FORM-CRETE STEEL FORMS FOR CASTING REINFORCED OR PRESTRESSED CONCRETE

DOUBLE T SLABS | SINGLE T JOISTS | HOLLOW AND SOLID LINTELS | SQUARE AND OCTAGONAL PILING | BRIDGE BEAMS | CUSTOM FORMS



CMC TED (Truck Engine Drive) Transcretes use truck engine power to drive mixer without sacrificing performance! This means **BIG SAVINGS – up to $55 per month per machine on gasoline alone.**

TED Transcretes have all the **BIG VALUE** features found on other Transcretes which guarantee **FASTER** charging – **MORE THORO** mixing – **QUICKER** discharge!

Sizes to 7-yard mixing capacity.

Truck Engine Drive or Independently Powered – TRANSCRETES are real money makers!

All CMC Transcretes have: (1) **Hopper** that "Swings In" for faster charging, "Swings Out" for quicker discharge. (2) **Floating Drive** that eliminates **all** the troubles of ordinary rigid drives. (3) **Drum** with extra large diameter head plus deep "L" section blades for more-thoro mixing action.

Transcretes with separate mixer engine are available in many models to 7-yard mixing capacity.

Make bigger Ready-Mix profits. Write for these

2 FREE Transcrete Bulletins

on (1) Auxiliary Engine Transcrete (2) TED Transcrete

CONSTRUCTION MACHINERY COMPANY, Waterloo, Iowa

Rx Ready Mix

By HARRY F. THOMSON
Consulting Engineer, St. Louis, Mo.

Warm Concrete — Lower Strength

MOST chemical reactions proceed more slowly at low temperature and faster at high temperature, as compared to the speed at normal room temperature. As the hardening of the paste in portland cement concrete is due to the formation of "gel," which results from hydration of the cement, the rate of hardening may be expected to follow this general rule. We think of this action chiefly in terms of temperatures below normal, *i.e.*, the hardening of concrete is retarded at lower temperatures, until at just above freezing the development of strength is exceedingly slow.

The reverse condition of faster hardening applies for concrete having a temperature above normal. However, the higher temperature also modifies the physical results of hydration: the higher the temperature, the greater the modification. Whereas at normal temperature the hydration products are principally in the form of "gel," at elevated temperatures they tend toward a crystalline condition. The modification of the "gel" produced by high temperatures is such as to lower the ultimate strength of the concrete.

Figure 1 shows the effect of temperature on strength for concrete specimens which have been mixed, molded, and cured at 40, 73, and 105 deg. F., respectively. This figure is abstracted from the section on temperature effect in the well-known booklet *Design and Control of Concrete Mixtures,* published by the Portland Cement Association. The water content of each of these concretes was adjusted to obtain the same slump when mixed. It will be noted that the 40 deg. F. concrete had strengths below normal (73 deg. F.) concrete at all ages. Also, the 105 deg. F. concrete developed higher strength than the normal specimen during the first few days, but lower at later periods, and only about 80 percent of normal at 28 days. Further characteristics of such warm concrete are reviewed below.

Back in 1932 a sub-committee of A. S. T. M. Committee C-1 on cement prepared a digest of information then available regarding the effect on strength of above-normal temperatures in fresh concrete. Among the conclusions of that review of data from both laboratory tests and construction projects were the following:

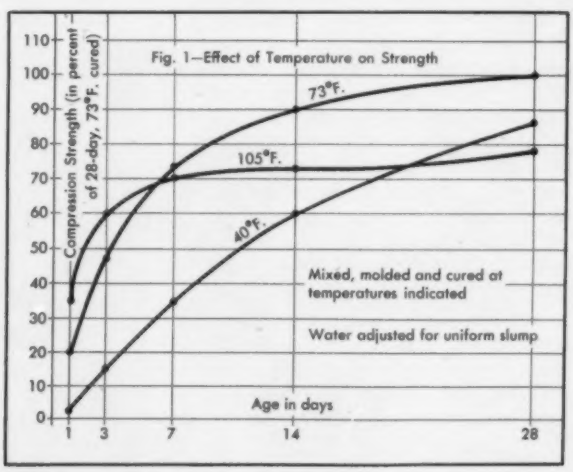
The temperature of freshly mixed concrete depends on the temperatures, specific heats, and weights of all of the materials entering into the concrete.

Increasing the temperature of freshly mixed concrete decreases the slump and flow.

There appears to be little effect on strength until the temperature of the freshly mixed concrete approaches 100 deg. F. For test specimens mixed and cured at 130 and 165 deg. F. the one-day strength was increased, but at later periods the strength was decreased. This decrease in strength at the higher temperatures appears to be due in part to the additional water required to maintain a given consistency.

These conclusions have been confirmed by experience with warm concrete as indicated by the strength relations reported in Figure 1, based upon more recent tests in the P.C.A. laboratory. The reduction in strength resulting from high temperature in fresh concrete is worthy of consideration in every ready-mix operation where water and aggregates must be heated for winter operation. Concrete at 70 deg. F. is fine; at temperatures much higher than that it may be troublesome. Unless a plant is properly equipped; it may be hazardous to heat aggregates with steam jets, because if there is an interruption in the movement of materials through the bins for a considerable period, as during a lunch period or a delay between trucks, the aggregates may become unduly hot. The correction procedure is to shut off the jets during a delay; but unfortunately few plants are equipped to cut off the steam conveniently. True, the reduction in strength of the concrete in place may not be as indicated in Figure 1, because the test specimens were cured at the warm temperature, whereas the concrete in the structure will cool considerably during cold weather. Further test data along this line will be presented later in this article.

A problem facing a customer who receives unduly warm concrete is that of placement and finishing. Such concrete may develop its initial set so fast that it cannot be properly handled into place, screeded if necessary, and finished. Such an experience may result in a substantial claim against the concrete producer, as the requirement may be the removal of the section of hardened concrete. Also, a warning may be offered against adding an accelerator, such as calcium chloride, at the plant if there is a possibility of the fresh con-



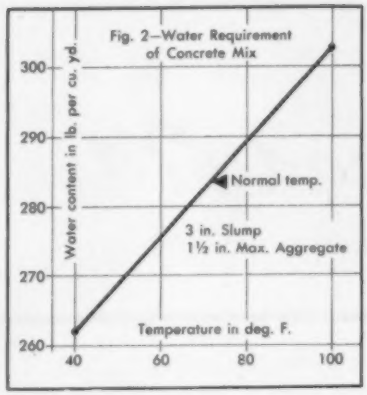
crete being above, say, 80 deg. F. The rapidity of its action in setting may be so fast as to cause all the difficulties of a "flash set."

The influence of the water requirement of fresh concrete to maintain a given slump as the temperature increases is not always realized. A typical example of the increase in water with temperature rise is shown in Figure 2, as observed for a 5½-sack-per-cu.-yd. mix with 1½-in. coarse aggregate and a 3-in. slump. The increase in water content at 73 deg. F. to that at 100 deg. F. was 17 lb. or approximately ⅓ gal. per sack of cement. This increase would account for a reduction of about 340 p.s.i. compressive strength at 28 days or roughly 10 percent. Regardless of other characteristics which may be influenced by warm temperature, a loss approaching 10 percent in 28-day strength might be disastrous in furnishing concrete under a strength guarantee.

But even with the water content held constant for different temperatures, the ultimate strength is reduced importantly for concrete having high temperature when fresh. Figure 3 is abstracted from data given in a paper by Walter H. Price, U. S. Bureau of Reclamation, on *Factors Influencing Concrete Strength.*[1] These comparative graphs show the effect of temperature of the fresh concrete on the compressive strength at ages up to 6 months, when the water-cement ratio of the mixes was maintained constant at 0.50 by weight of the cement. The concretes were mixed at temperatures of 70, 85, and 115 deg. F. The specimens were cast and maintained at the mixing temperatures for only two hours, and then stored at 70 deg. F. until the age of test. The graphs show that the compressive strength decreased as the temperature of the freshly mixed concrete increased. The concrete mixed at 70 deg. F. had a compressive strength at 28 days of 4,800 p.s.i., and the same concrete mixed at 115 deg. F. had a 28-day strength of 4,250 p.s.i. If the water-cement ratio in these tests had been adjusted to maintain the same slump, as was the condition reported in Figure 1, the reduction in strength would have been even greater.

The relative influence of temperatures of materials on the temperature of freshly mixed concrete is not too well understood. The contributions of the temperatures of the in-

[1]*Proceedings*, A.C.I., 1951.



gredients to the temperature of a 6-sack-per-cu.-yd. mix, with water-cement ratio of 0.50, are as follows:

1.6 deg. F. aggregate temperature changes concrete temperature 1 deg.

3.6 deg. F. water temperature changes concrete temperature 1 deg.

9.0 deg. F. cement temperature changes concrete temperature 1 deg.

Thus, the large contribution of the temperature of the aggregates to the temperature of the concrete will be noted. These data confirm the suggestion made earlier in this article, that any over-heating of aggregates entering a mix should be studiously avoided.

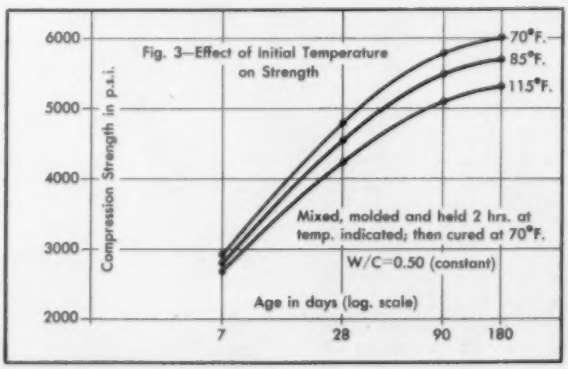
Reference has been made in previous articles in this column[2] to the need for curing test specimens under the A.S.T.M. prescribed conditions in order to develop full compressive strengths. It has been pointed out that almost any deviation from standard conditions will result in an indicated strength which is lower than the full strength that should be attained. A comprehensive series of tests conducted in the laboratory of the N.R.M.C.A. on the *Effect of Curing Conditions on Compressive Strength of Concrete Test Specimens* was reported by D. L. Bloem in N.R.M.C.A. Pub. No. 53, Dec., 1954.[3] Figures 4 and 5 are abstracted from the several combinations of temperature and curing conditions included in that report. The curing conditions included not only different temperatures but also different lengths of exposures to non-standard conditions before the specimens were placed under standard damp curing.

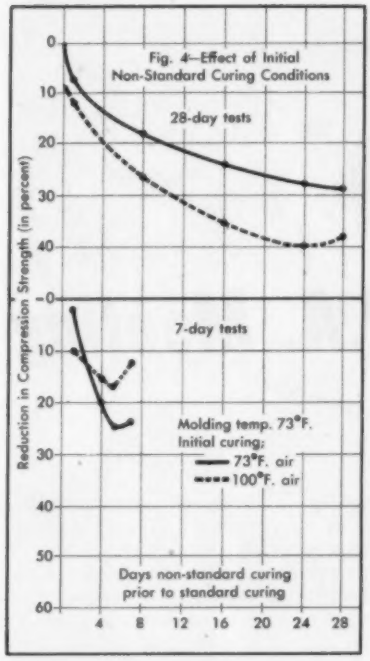
The graphs in Figure 4 refer to specimens molded at normal 73 deg. F. and kept at either 73 or 100 deg. F. in air in both cases for the number of days shown on the horizontal scale as non-standard, then cured under standard conditions until the time of test, either 7 or 28 days. The vertical scale for each test period gives the percentage reduction in strength, as compared to standard moist curing for the entire period. Thus for 4 days of standing in air at either 73 or 100 deg. F. and 3 days of standard curing, there was a sacrifice of approximately 20 percent of the strength to be developed under 7 days of standard curing. Also, for 4 days in air at 73 deg. F. and 24 days of standard curing there was a sacrifice of about 12 percent of the strength under 28 days of standard curing. If the 4 days of initial standing were in air at 100 deg. F., the 28-day strength was about 20 percent below that for full 28-day curing.

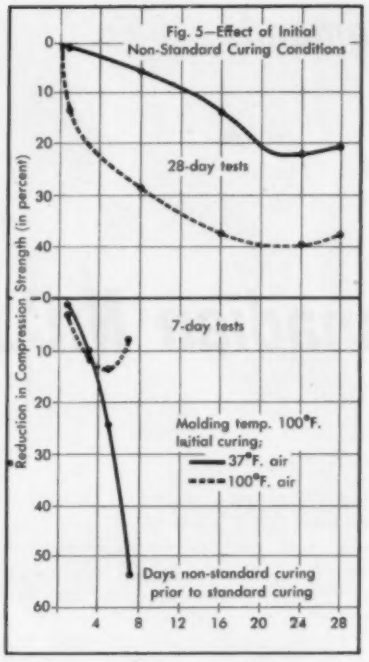
The condition of standing in air at 73 deg. F. for the first 4 days would be substantially that of leaving test cylinders standing on the job for that time during mild weather, before transferring them to the laboratory. The similar timing at 100 deg. F. air would approximate the condition during summer heat. The results indicate the reduction in 28-day strength when cylinders remain on the job for only 4 days, and em-

[2]See December, 1955, issue, page 164.

[3]Obtainable from National Ready Mixed Concrete Assn., Munsey Bldg., Washington 4, D. C.



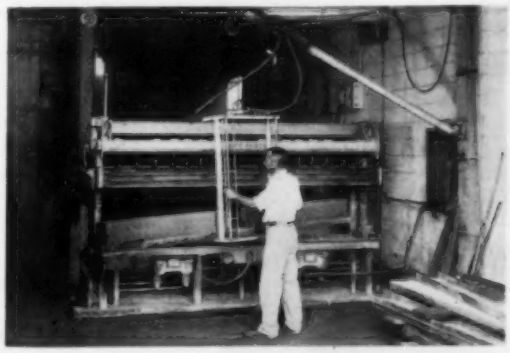




phasize the need for compliance with the A.S.T.M. specification for removal of cylinders to laboratory standard curing at 24 hours after molding. The results also refute the statement which is sometimes made, that cylinders left on the job for several days before reaching the laboratory will "recover" and show a 28-day strength comparable to the strength they would have had, if they had reached the laboratory after the specified 24 hours. A reduction in 28-day strength of from 12 to 20 percent indicates that such "recovery" does not take place in full and that such 28-day tests do not properly reflect the quality of the concrete.

Similar graphs are given in Figure 5 for concrete specimens molded at 100 deg. F. and given initial exposure to 37 and 100 deg. F. air for the number of days on the horizontal scale, before transfer to standard curing for the remaining days until the time of test. If held for 4 days at either air temperature, there is indicated a reduction in 7-day strength of approximately 10 percent. After the same 4-day holding the reduction in strength at 28 days was approximately 4 percent for 37 deg. F. air, and somewhat over 20 percent for 100 deg. F. air. The condition of 37 deg. F. air simulates the condition of a cylinder of warm concrete being exposed to winter air, but above freezing, for 4 days before reaching the laboratory. The condition of 100 deg. F. air reflects the sacrifice in strength of warm concrete, if exposed to warm air for 4 days, as might occur if a cylinder were stored close to a stove in a construction office until transferred to the laboratory. This graph indicates a serious loss of strength—approximately 40 percent at 28 days—for warm concrete kept in a continuously warm location, such as in a poorly ventilated boiler room. This latter possibility might also be approached in delivering to interior construction during very warm weather, and should be taken into account in serving a project under such a severe combination of conditions.

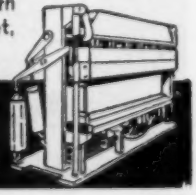
In referring to warm concrete the *Recommended Practice for Winter Concreting*, as issued by the A.C.I. (1955 Report of Committee 604) summarizes the effects of temperature variables considered above, as follows: "Higher temperatures (than normal) require more mixing water, cause slump loss and sometimes quick setting, and increase the thermal shrinkage. Rapid moisture loss from hot exposed concrete surfaces may cause plastic shrinkage cracks." Accordingly, delivery of concrete having a temperature considerably above normal is likely to furnish a product which will not develop strength as high as if the batch were at normal temperature.



removing 4" x 8" x 4' lintels from PreCaster at Capitol Concrete Products Co., Topeka, Kansas.

mechanize lintel making

• Block makers in all parts of the country have found that, by mechanizing the precasting of lintels and other forms hard-to-make on the *PreCaster*, they open the way to much new and very profitable business. The daily production of two and three man teams is much larger. "133% more lintels in a nine hour day" . . . "1000 feet of lintels daily" . . . "1000 feet of concrete cribbing daily" . . . so run the letters from satisfied *PreCaster* customers. They report that they produce all concrete precast items with color and texture comparing favorably to their block. They write: "now you can realize why we consider our *PreCaster* a wise investment". Write today for catalog with seven profit opportunities. PreCaster Inc., 5217 Beech Street, Cincinnati 17.



PRECASTER

Tight credit, labor demands, taxes discussed at

Canadian N.C.P.A. Meeting

THE eighth annual convention of the National Concrete Products Association took place on January 17, 18, and 19, at the Sheraton Mount Royal Hotel, Montreal, Canada. The sessions were attended by more than 100 persons connected with block production or other seggents of the concrete industry of Canada, along with many others from across the border. The two-day program included papers and discussions on many subjects, most of them keyed to this present period of subdued optimism, as characterized by the general tone of the meeting.

It was reported that most Canadian concrete products manufacturers are looking forward to a year, perhaps, of "marking time," and then to a further building spurt that will carry on into the foreseeable future. Most producers felt that they were thrown off-stride a little in 1956, with its increased credit restrictions, labor difficulties, and new taxes on their product. A great majority are now prepared in some measure for a levelling-off, and they will use the interim opportunity afforded to consolidate the gains they have made over the last ten years.

Block manufacturers are most interested in setting standards for their products. They are revising the form of some of the A.S.T.M. Standards in setting up the new Canadian Standards Association for concrete block. An association committee is working closely with this new standards group. Concrete brick producers are similarly concerned with working out standards for the C.S.A. approval, and with the development of their present market.

All segments of the concrete industry—particularly concrete pipe producers—are vitally concerned with the sales tax situation which has developed over the last year, involving several alleged inequities in the sales tax setup which has only recently applied to some portions of the industry. Throughout the meeting, both in conversation and in some papers which dealt with phases of this problem, many complaints were heard, that considerable business had been lost to competitive products because of the unequal applications of the tax.

Col. Charles Hadley, of Chatham, Ont., was elected president of the association. Carson Luke, Paris Dunbrik Company Ltd., Paris, Ont., was named vice-president; and Robert Eakins, Century Concrete Products Ltd., Toronto, secretary-treasurer. New directors elected for five years include Roy Kennedy, Schell Industries Ltd., Woodstock, Ont.; Don McPherson, Storrar Dunbrick Ltd., Weston, Ont.; and Irving Lowen, Supercrete Ltd., St. Boniface, Man.

The growing use of prestressed concrete and a spectacular expansion in the concrete pipe field were two of the more striking instances of the rapid development of the concrete products industry in 1956. The direction in which such developments are taking the industry, and methods of controlling them were major topics for discussion at the meeting.

Members of the association examined their industry from inside out—in a series of panel discussions—and from outside in—as guest speakers discussed their products, including block, brick, pile and tile, and prestressed and precast concrete.

One speaker, Phillip Paolella, Plasticrete Corporation, Hampden, Conn., brought greetings from the National Concrete Masonry Association, and urged Canadian manufacturers to think imaginatively about concrete block, and to sell its glamour as well as its economy, utility, or other better known attributes. In his talk he referred to several developments in concrete block in the United States, including the new Shadowal

Newly elected officers and directors in this group are (seated): Robert Eakins, Toronto, secretary-treasurer; Col. C. S. Hadley, Chatham, Ont., president; and Carson Luke, Paris, Ont., vice-president; and (standing): Irv Lowen, St. Boniface, Man.; Don McPherson, Toronto; and Roy Kennedy, Woodstock, Ont., directors.

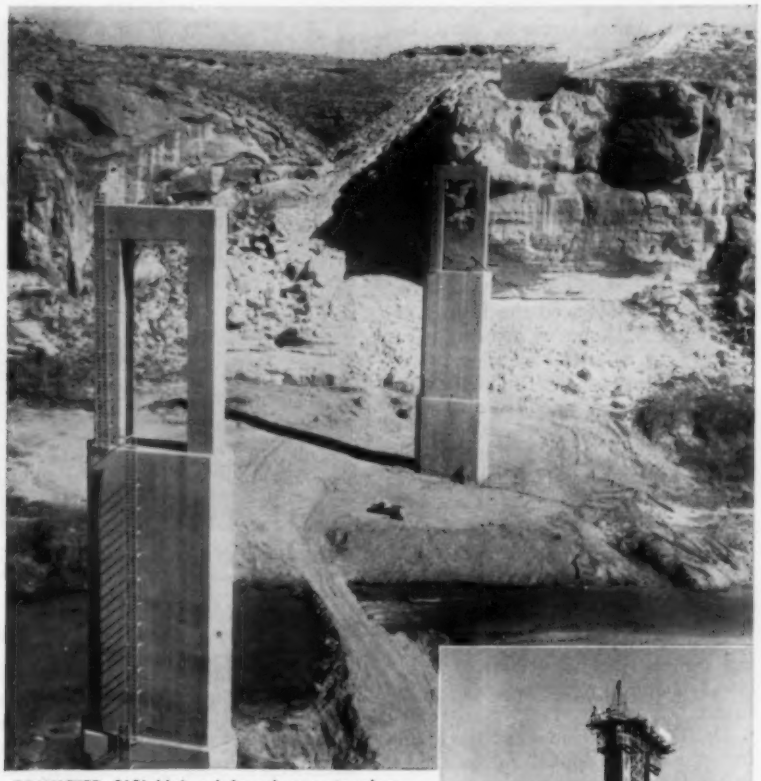
Texas Outwits an Outlaw

Hydraulically-jacked slip-forms raise monolithic piers a safe 210′ above bad-acting Pecos River

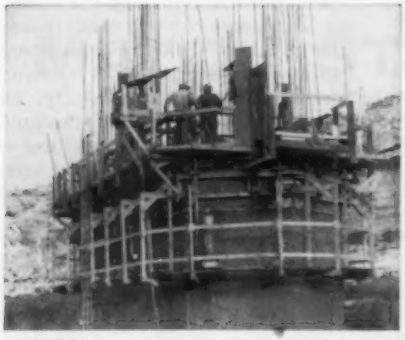
ON U. S. HIGHWAY 90, near Langtry, Texas, where Judge Roy Bean pronounced rough Western justice and tender homage to the "Jersey Lily", Texas has built a "sky-high" span to lick the outlaw river that washed-out 2 lower-level structures in two successive years.

The new 1,310′ long deck truss cantilever bridge is supported on 210′ monolithic piers which were poured with slip-forms hydraulically raised by one man. Concrete of 3″-4″ slump was placed in layers 2″ to 4″ deep and hand puddled. The seepage of excess water eased upward movement of the slip-forms.

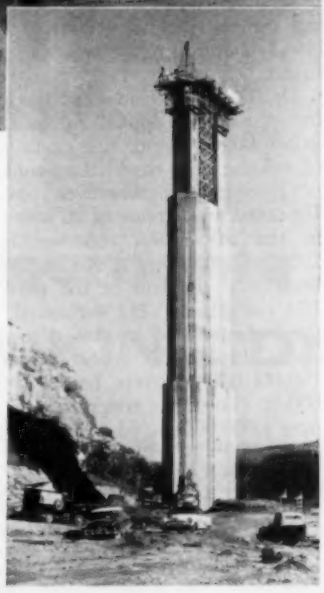
A 1″ jacking cycle averaged 1½ minutes. Use of 150° mixing water reduced concrete set-up time 20%, making possible a rate of placement as high as 11″ per hour and never less than 5″ per hour. In 20 weeks, 5,600 cu. yds. of Class A, 5-sack mix structural concrete were placed. Properly processed material and on-site deliveries paced to hourly progress were provided by truck mixers of certified design, capacity, mixing speed and water control accuracy.



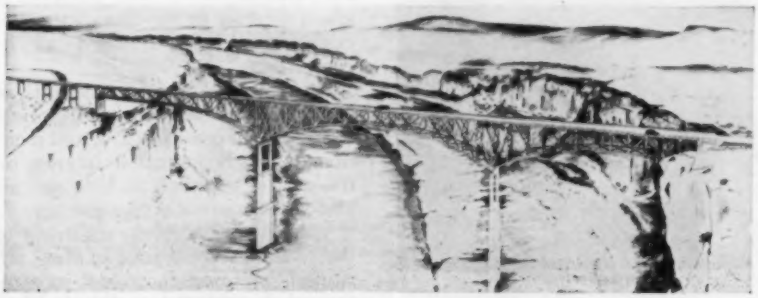
COMPLETED 210′ high reinforced concrete piers for Pecos River Bridge near Langtry, Texas. Designed under supervision of D. C. Greer, state highway engineer, Texas State Highway Department. Randle B. Alexander, bridge engineer. Whittle Contracting Co., Dallas, Texas, contractor, B. M. Heede, Inc., Long Island City, N. Y., consultant.



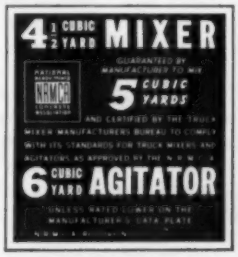
SLIP-FORMS start up bottom section of a pier. Three forms were used, one for each section.



BOTH RECTANGULAR COLUMN LEGS of upper tier were poured simultaneously. In about 90% of the pier elevation, alignment is within 1/16″.



TEXAS HIGHWAY DEPARTMENT sketch of 1,310′ long bridge on Highway 90, near Langtry, Texas. The 3-span continuous deck truss cantilever structure runs from rim to rim across top of the canyon —272′ above the traditionally treacherous Pecos River.



You have a right to insist on this Rating Plate. It certifies compliance with the high industry standards maintained for your protection by the Truck Mixer Manufacturers Bureau.

BLAW-KNOX CONSTRUCTION EQUIPMENT DIV.
Mattoon, Ill.
CHAIN BELT COMPANY
Milwaukee, Wis.
CHALLENGE MANUFACTURING CO.
Los Angeles, Calif.
CONCRETE TRANSPORT MIXER CO.
St. Louis, Mo.
CONSTRUCTION MACHINERY CO.
Waterloo, Iowa
THE JAEGER MACHINE COMPANY
Columbus, Ohio
LeTOURNEAU-WESTINGHOUSE CO.
Indianapolis, Ind.
THE T. L. SMITH COMPANY
Milwaukee, Wis.
WHITEMAN MANUFACTURING CO.
Pacoima, Calif.
WILLARD CONCRETE MACHINERY CO., LTD.
Lynwood, Calif.
WORTHINGTON CORPORATION
Plainfield, N. J.

Carson Luke, first vice-president of N.C.P.A. of Canada.

block, which features recessed depressions machine-formed in the faces of the units to furnish attractive architectural effects.

Lou Scholes, retiring president of the N.C.P.A., reviewed the year 1956 in retrospect, comparing the feelings and hopes held by most producers at the start of the year with the actualities at the end of his term of office. He feels that few had anticipated the fact that the governments of the United States and Canada becoming somewhat alarmed at an over-extension of credit, would enact the "tight money policies" which they had put into effect in the course of the year.

He warned against price competition and the sacrifice of quality. He urged association members not to become panicky in the face of restricted output or demand, but to survey the situation as it applies to each individual, and to adjust to it as necessary. While this action may affect some firms very drastically, Mr. Scholes feels that the general picture calls for collective attention by the industry. The problems cannot be solved, he said, by individual firms, but only by collective action, to prevent drastic restricted volumes throughout the industry.

During his term of office, he reminded his audience, the A.F. of L. and the C.I.O. unions merged into one vast, more powerful segment of labor. Since that time, organized labor has developed a stronger approach to unorganized industry, particularly the trucking division directly affecting the business welfare of association members. The new and unresolved problems accruing from this increased union strength must be dealt with through collective action.

Finally, he cited the Canadian government's imposition of certain taxes, not previously applied to the products of the industry. He stated that the association had already acted on behalf of certain members who had found that discriminations in these tax matters had hurt their businesses.

Robert Davidson, executive secretary of the association, gave a talk in which he reviewed the history of the N.C.P.A., from its incorporation in 1949, as a central clearing house of information for the concrete products industry. A steady growth has since ensued, from the original 12 members to its present size. Today N.C.P.A. members are producing an estimated 90 percent of Canada's volume of concrete products.

One of the more interesting topics Mr. Davidson described in his talk—the benefits of the association's group insurance carried for the employees of its members—is a subject of growing interest in this country for all associated groups to consider in the future.

Dr. Davidson reiterated the retiring president's appeal for calmness in the face of impending curtailment of volume, and urged the avoidance of price-cutting wherever possible. He noted an increase of 26 new firms in the association membership in 1956, and stated that the total membership at the end of the year was 133 companies. He estimated that the industry had produced in 1956 about 150,000,000 concrete blocks, 100,000,000 concrete bricks, 7,000,000 ft. (lineal) of concrete pipe, and over 4,000,000 cu. yd. of ready-mixed concrete.

R. O. Beauchemin, Montreal, consulting engineer, in a paper entitled *Precast Concrete—Its Problems and Advantages,* reviewed the startling growth of this industry in Canada and in the United States during the last five years, and cited its adoption by many of the leading engineers and architects of both countries. He concluded that even a greater use will result from the combination of precasting and prestressing which is being considered as a means of achieving more efficient and more beautiful structures.

Alex Wylie, field secretary, is a past president of the association, and one of its founders.

Mr. Beauchemin listed the following advantages of prestressed, precast structures: economy of installation, quality of product, speed of construction, flexibility, and availability. He cited several outstanding examples of prestressed concrete structures of different types which show the great versatility of this new method of design.

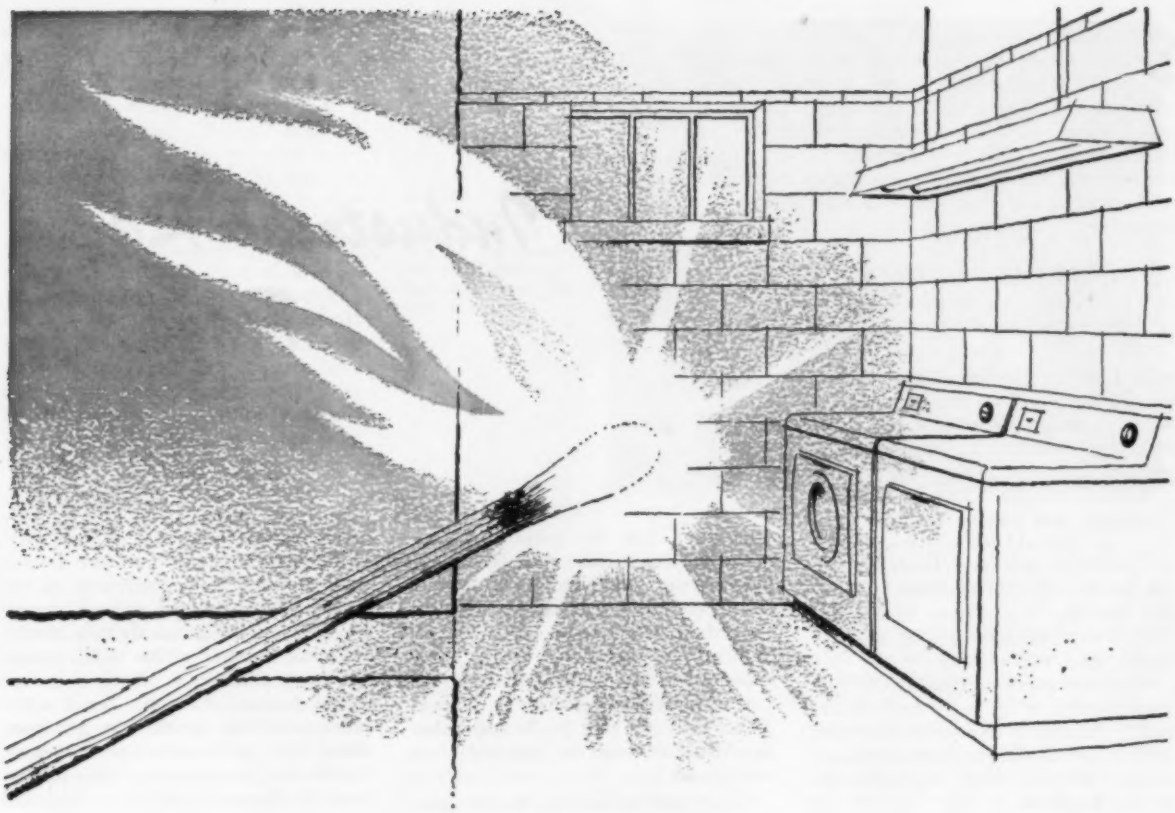
Fred Palmer, sales consultant, Columbus, Ohio, passed on some of his sales knowledge to the Canadian manufacturers. He was brought to the Montreal meeting by Fred Reinhold, Anchor Concrete Products, Inc., Buffalo, N. Y. Mr. Reinhold is also a director of the Canadian association, and has attended all its conventions.

Alex Wylie, field secretary of N.C.P.A., reported on meetings held from coast to coast in 1956, and mentioned greatly increased interest on the part of members in both eastern and western areas of the country.

J. L. Ryan, Windsor, chairman of the technical committee of the association, reported increased recognition of the N.C.P.A. on the part of the government. He invited members

(*Continued on* page 329)

Alex D. Wylie, co-founder of the association (left), and Fred W. Reinhold, Buffalo, N. Y., honorary director.



Keeps Basements MATCH-STRIKING Dry

● The key to a dry basement lies in the basic soundness of the foundation's construction, proper drainage, good workmanship *and the best water-repelling material.* The advantage gained by using Medusa Water Repellents is that they make basements "match-striking" dry *simpler* and *more effectively* than any other known method.

Successfully used for fifty years, Medusa Water Repellents, *builds the water-repelling materials right into the walls and floor.* They are distributed throughout every inch of the concrete—lasts as long as the concrete itself. Instead of using a regular portland cement, you use Medusa Waterproofed Portland Cement* in the floors, mortar, blocks, plaster coats and monolithic wall. No extra time is required—no added supervision. It's the safe, long-lasting way to assure dry basements. For detailed specifications write for booklet, "Integral Waterproofing."

**Where Medusa Waterproofed Cements are not available use Medusa Waterproofing Paste or Powder in regular portland cements.*

● ***CONSULT YOUR ARCHITECT***

MEDUSA WATER REPELLENTS

MEDUSA PORTLAND CEMENT COMPANY • P. O. Box 5668 • Cleveland 1, Ohio

WHITE • WATERPROOFED WHITE • GRAY • STONESET •
WATERPROOFED GRAY • AIR ENTRAINING • BRIKSET •
HIGH EARLY STRENGTH • WHITE TILE GROUT CEMENT •

SALES OFFICES: Cleveland, Ohio • Chicago, Ill.
Toledo, Ohio • Pittsburgh, Pa. • New York, N.Y.
Milwaukee, Wis. • Baltimore, Md. • Paris, Ont.

OVER SIXTY-FIVE YEARS OF CONCRETE PROGRESS

Industrial Radio Pays Off

By LEON H. FREDERICH
Production Superintendent
Albuquerque Gravel Products Co.

SAVING your customers time and money by providing them with better service is one formula for building a successful business. There is no better salesman than service. That's why we believe two-way radio is essential to our business. With more than five years of experience running a radio-controlled ready-mix and gravel operation, we've had ample opportunity to evaluate its benefits to all concerned — customers, company, employees, and even the general public.

Albuquerque Gravel Products Company was one of the first concerns in this field to receive a license to operate its own radio system under the present Special Industrial Rules. We installed our system in March, 1951. Our decision to do so was based upon two factors.

First, our general manager, M. Eugene Sundt, is an avid and skilled radio amateur. He was therefore well aware of the possible communications advantages of two-way radio to our business.

Second, we knew just where it would help us and calculated in advance that it would return its cost in short order. After watching our transit-mix trucks line up at the batch station and give their orders to the operator, then wait their turn, often as long as 10 minutes, we figured that just by permitting the driver to call in his order before he reached the plant, the radio would pay its own way. An estimate of only six orders per day per truck at 10 minutes less delay per order indicated a savings of one hour per day —readily translated into a savings of $8 per day per truck and man. For these reasons we installed two-way radio.

Now, with knowledge based upon hindsight rather than foresight, we have reached the following conclusion, which Lloyd Sallee, superintendent, has expressed as follows: "More important than any (financial) savings we obtain is the better service we give the customer. As an example, consider the case of a customer pouring about 30 cu. yd. As he neared the end of the pour, he'd hesitate about ordering more concrete until he had poured about 25 yards and knew exactly how much more he needed. The result: the last truck often took about 2 hours to get out on the job. Now, with radio, the last truck can get out about half an hour sooner, a real benefit for the customer, who might have 30 men waiting."

Ironically enough, after customers find out that you have radio-equipped trucks, they *expect* the improved service. Besides our 50 radio-equipped trucks, we have a few spares that are not so equipped. Whenever we are forced to send out one of the spares to a contractor, we expect to hear from them. They have even threatened to send them back.

The drivers are just as pleased with radio as the customers. When you're at a customer's site and questions arise, it's a comforting feeling to be able to pick up the microphone and relay the question to the dispatcher. If the dispatcher can't give the driver the answer immediately, we can find out and call back. Also, it's not uncommon for one job to have three different mixes being poured at the same time. By notifying the dispatcher of mix changes *via* radio, the driver is able to eliminate a great deal of confusion.

When you stop to think about it, there are many different emergencies that can arise in our business. Take the matter of "down time" for trucks. We have ten mechanics who use two-way radio - equipped pick - up trucks. They know that time is of the essence when a driver reports a breakdown. Radio not only helps the driver report the breakdown immediately, but also enables the me-

Plant No. 2 of Albuquerque Gravel Products Company, Albuquerque, N. M., a ready-mixed concrete firm, showing the antenna at the top of the building for base station control of two-way radio in a fleet of trucks.

chanic to talk to the driver and find out what parts may be needed.

Just this morning there were two calls for mechanics. In one case a water pump had "frozen" and the mechanic was on his way with a replacement in less than 20 minutes. Similarly, a call about a broken water line was handled expeditiously. Of course, these troubles are minor, compared to the failure of a drive line on a mixer or a chain jumping or a clutch slipping. These breakdowns sometimes result in hardened concrete in the mixer drums. New drums cost about $1,800, and there have been occasions when the only thing that saved a drum was the radio.

How the dispatchers benefit by using radio is less easily described. However, on a number of occasions they have expressed their need for it. Recently a storm knocked out the cable that connects one of our remote-control units with the base station. The dispatchers were quite unhappy for the short time the unit was off the air. After you are accustomed to talking to the drivers at any time, both asking questions and providing answers, it is understandably difficult to handle orders over the phone and then lose contact until the driver calls again. In this particular instance, we set up a mobile unit to serve as a base station until the trouble could be found and corrected.

There have been numerous occasions when the public has benefited by our radio setup. With the number of trucks we have operating throughout the city and surrounding area, it is not surprising that drivers sometimes spot accidents just as they happen. On such occasions they radio the dispatcher, who in turn calls the police or an ambulance. Probably our most important public service occurred last year, when Albuquerque was hit by floods. Because our radio system provides such good coverage of the town, it was used to route trucks and materials being used to fight this disaster.

Herman Rutledge, dispatcher at the remote radio unit at one of the plants, has an "off-the-air" test monitor on the shelf at his left.

We use radio not only for our four ready-mix plants, but also for our gravel plant. There are two base stations, one for ready-mix operations and one for the gravel plant. However, each ready-mix plant has its own dispatcher, each of whom remotely-controls the same base station. This setup has worked out very well since all receivers and transmitters are on the same frequency and all dispatchers and drivers can hear each other. We average about 100 calls a day, so the traffic burden is no problem.

The gravel plant application of radio has been very rewarding. We use two types of loading equipment —a crane with a clamshell and a portable hopper and front-end loaders. With a pit area of some 120 acres dotted with stockpiles of gravel and sand, it was no small problem to track down the front-end loaders and direct them to the proper stockpile. Now they are equipped with mobile two-way radio units. Trucks stop at the dispatcher's office on the way in and the drivers tell him what they need. The dispatcher then calls a front-end loader and has it meet the truck at the proper stockpile. The saving in time is remarkable, and we are proud of the better service we are able to provide.

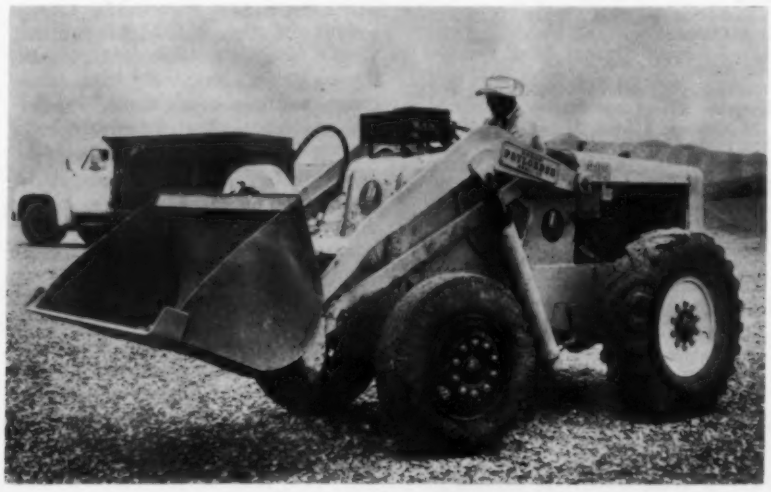
In our radio system we use Motorola 60-watt base station units for ready-mix operations and a 30-watt base station for the gravel plant. Mobile units are 10- and 25-watt units, both transmitters and receivers operating on the same frequency. Consequently, all drivers and dispatchers are effectively on a party line. Drivers can talk directly to drivers of other trucks, to four servicemen in radio-equipped cars, who oversee the pouring of concrete on various jobs, to superintendents, and to the dispatchers.

The ready-mix base station antenna is mounted on a 40-ft. pipe mast on an 80-ft. tower, in all a height of 5,400 ft. above sea level. We regularly are able to talk to the state capitol, Santa Fe, about 65 miles away, and we easily cover an area with a diameter of 60 miles.

When the radio system was first

(*Continued on page* 332)

A radio-equipped front-end loader in the gravel pit has a mobile radio unit in a weatherproof housing before the driver.



N.C.M.A. Honors Winners Of 1955-56 Plant Safety Competition

THE National Concrete Masonry Association has cited 46 member companies for their outstanding work in accident prevention.

All are finalists in N.C.M.A.'s third annual safety contest, which covered the 12-month period ending July 31, 1956. They were honored at the association's convention in St. Louis on February 25.

Each of the 46 plants completed the contest without a single lost-time accident. Seven have operated three straight years without a mishap, while 14 others boast a clean slate for two consecutive years.

Special plaques went to companies having the top safety record in three production categories. Winner of the Class A prize is the Cleveland Builders Supply Company, Cleveland; Class B, Nailable Cinder Block Corporation, New York, N. Y.; and Class C, Fischer Lime & Cement Co., Memphis, Tenn.

The other finalists receiving N.C.M.A. certificates of achievement in safety are listed below. (Results were based on block output, over-all safety, and total man hours worked.)

Three consecutive years without accident:

Felicetti Concrete Products, Niagara Falls, N. Y.

Fischer Lime & Cement Co.,[1] Memphis, Tenn.

Ellis Barbour

W. A. Carter Sr.

M. J. Grove Lime Co., Frederick, Md.

John Haeusser Concrete Products, Inc., Buffalo, N. Y.

O. G. Hanson & Son, Princeton, Minn.

Northwest Concrete Products Co., St. Cloud, Minn.

Southern Tier Concrete Products Co., Alfred, N. Y.

Two consecutive years without accident:

Aberdeen Block Co., Aberdeen, S. D.

Alaska Concrete Products Co., Fairbanks, Alaska.

Auburn Cement Products Co., Inc., Auburn, N. Y.

Capitol Concrete Products Co., Topeka, Kans.

Concrete Products Co., Sioux City, Iowa.

The Geist Builders Supply Co., Cleveland, Ohio.

Fred Johnson Cement Block Co., Duluth, Minn.

Kentucky Concrete Products, Inc., Newport, Ky.

Maramonte & Sons, Milwaukee, Wis.

N. C. Products Corp., Raleigh, N. C.

Patterson Supply Co., Monongahela, Pa.

Standard Block Co., Gulfport, Miss.

Stewart-Nattinger, Inc., Springfield, Mo.

One year without accident:

Alexander Materials Co., Hattiesburg, Miss.

Atlanta Aggregate Co., Inc., Stockbridge, Ga.

Bellingham Concrete Products Co., Bellingham, Wash.

Century Concrete Products, Ltd., Toronto, Ontario, Canada.

[1]Winner—Class C award
[2]Winner—Class A award
[3]Winner—Class B award

The Cleveland Builders Supply Co. (Hugo plant),[2] Cleveland, Ohio.

Concrete Manufacturing Co., Atlanta, Ga.

Cook Block Co., Croswell, Mich.

The Cooksville Co., Ltd., Cooksville, Ontario, Canada.

Dagostino Building Blocks, Schenectady, N. Y.

Devos Block Co., Milwaukee, Wis.

Grafton Concrete Products Co., Inc., Greenville, Miss.

Guth Bros. Block Co., Jackson, Mo.

Ideal Cement Stone Co., Omaha, Nebr.

Landis Block Co., Souderton, Pa.

Letendre & Frere, Reg'd., Drummondville, Que., Canada.

McKinney Concrete Products, Inc., Pueblo, Colo.

Miller Block Co., Evansville, Ind.

Nailable Cinder Block Corp.,[3] New York, N. Y.

Nolan Browne Co., Dallas, Tex.

Palmette Quarries Co. (Myrtle Beach plant), Columbia, S. C.

Pinellas Concrete Products, St. Petersburg, Fla.

St. Henry Cement Products, St. Henry, Ohio.

Schupbach Bros. Ready-Mixed Concrete Products, Fenton, Mich.

L. E. Shaw, Ltd., Frederichton, N. B., Canada.

Texas Concrete Block Co. of Lubbock, Lubbock, Tex.

Yakima Cement Products Co., Yakima, Wash.

The 101 plants which participated in the contest chalked up these results: total man-hours, 4,700,508; lost-time injuries, 205.

The Hugo plant of the Cleveland Builders Supply Company produced nearly 10,000,000 8-in. equivalents without an accident to win this year's Class A award. In terms of production, this is the best safety performance ever reported by a contestant in the N.C.M.A. contest. Credit for this notable feat goes to the company's long, unceasing campaign to reduce accidents, led by Ralph Reiner, plant superintendent.

This company has sponsored an active safety program for many years. Russell W. O'Rourke, safety director, reports that the excellent co-operation shown by both management and supervisory personnel in taking immediate steps to correct any unsafe acts or conditions has been a major factor towards the program's success. A do-it-now policy prevails. Any plant hazard noted during the regularly scheduled safety inspections is immediately reported to the plant superintendent, and cor-

rective measures are initiated at once. Dividends from this type program are evident because the company is self-insured. The cost of every accident is paid out of company funds.

A single accident marred the record in 1955. In 1954 there were several foot injuries caused by falling pallets. The company's do-it-now safety team went into action to eliminate the recurrence of this type of accident. Today offbearers and others exposed to this particular hazard wear foot-shields *in addition to their safety shoes.* The shields are supplied by the company.

Top honors in the Class B group went to the men of the Nailable Cinder Block Corporation, Brooklyn, N. Y., led by their capable plant superintendent, Ellis Barbour.

Working safely isn't new at Nailable. Almost every year since 1950 Mr. Barbour and his men have won recognition for safety. Because of their fine record, the company now enjoys an extremely low workmen's compensation insurance rate.

There are a number of reasons why this is a safe block plant. Perhaps the most significant is management's attitude toward accident prevention. Both cognizance of the problem and eagerness for its solution are displayed by acts such as: (1) requesting the state labor inspector to make his inspections for plant hazards more thorough and critical than is customary; (2) underwriting one-half the cost to encourage the wearing of safety shoes; and (3) recognizing the employee's vital role in accident prevention. (The firm recently gave its employees a dinner for operating six months without a single lost time accident.)

A safe plant is a good place to work. The very low labor turnover at Nailable attests to this statement. All employees are old hands, and several, including Mr. Barbour, have been with the company for over 30 years. An employee roster, boasting three pairs of brothers and one father-and-son team are further proof that working conditions are good at this plant.

For the third consecutive year the Concrete Products Division of the Fischer Lime & Cement Company won the top award in the Class C group, for an outstanding safety record. W. A. (Bill) Carter Sr., plant manager, and his men have worked for over three years without an accident. During this time a rebuilding and modernization program has been under way. The accomplishment is an excellent example of how a reduction in accidents can be achieved through a sound safety program, for it was as late as 1948 that commercial insurance carriers were refusing to carry this plant's insurance because of excessive accident costs.

The Fischer company safety program includes: (1) the full time services of a trained safety engineer; (2) medical examination at the time of employment; (3) regular safety meetings with employees; (4) a continual exchange of ideas for accident prevention between management, safety engineer, and supervisory personnel; (5) and W. A. Carter. Mr. Carter is a true champion of accident prevention. By his perseverance, sincerity, and understanding he has taught men that safety is a way of life. His philosophy is reflected in the following example.

Recently an alert watchman at the Fischer plant detected fire at a neighboring plant, not Fischer's. By his quick response, this watchman caused the fire to be extinguished before appreciable damage was done. All concerned were pleased and praised the man's actions, but Bill Carter did even more. He brought the matter to the attention of certain people, with the result that the watchman was presented a citation by the governor of the state. He has discovered that recognition for safe acts is just as important in the training of his men as recognizing hazards.

Midway Distribution Plant Of Permanente Supplying Naval Construction Job

Permanente Cement Company's 30,00-bbl. capacity cement distribution plant on Midway Island in the Pacific is now in full operation, supplying cement for the construction of a Naval Air installation on the island, it was announced by Wallace A. Marsh, vice-president and general manager of Permanente.

The new facility was installed to expedite delivery of over 100,000 bbl. of cement to the contractor, the Hawaiian Dredging Company, Ltd., of Honolulu. The contract, which includes construction of administration buildings, barracks, runways, and other units, is scheduled for completion in the fall of 1957.

Cement is brought from the mainland in Permanente's bulk cement carrier, *S.S. Permanente Silverbow,* to the harbor at Honolulu.

N.C.P.A.

(*From page* 324)

of the association to submit queries and criticism regarding the provisions of the National Building Code which affect the concrete products industry. The technical committee also reviewed a brochure on masonry products prepared by the National Research Council.

The technical committee last year also was instrumental in deterring the Central Mortgage and Housing Corporation from issuing a revision which would have specified a new size of chimney block. This move would have necessitated the purchase of new mold boxes by all producers who make these items.

Prof. S. R. Kent of the School of Architecture, University of Toronto, presented a full report on modular co-ordination, in which he declared that this system will inevitably come into effect in the Canadian building industry. He described just how modular coordination works, using models to show the modular grid, and explained how modular products would fit within the grid.

S. A. Gitterman, Central Mortgage and Housing Corporation, Ottawa, promised full co-operation of his organization in the development of new ideas and experiments to speed housing erection, and to help reduce costs.

Of 56,000 houses built in Canada under the National Housing Act in 1955, he pointed out, about 23,000 had concrete block basement walls, but only 8,500 had either concrete block or brick in the exterior walls of the superstructure. He urged concrete products manufacturers to endeavor to increase the importance of their role in Canada's building effort.

Plant Improvement Planned By Nitterhouse Corporation

The facilities of the Nitterhouse Corporation near Windber, Pa., will be expanded and improved this year to keep pace with the building projects in the area, which are expected to total about $75,000,000. According to William Heil, general manager, 1956 was the best year in the firm's history, and 1957 is expected to be even better.

Nitterhouse produces "pinkcrete," lightweight, and conventional block, as well as crushed stone, sand, and ready-mixed concrete. Aggregates for its "pinkcrete" are red dog from mine rock dumps.

Charles H. Scholer,
Kansas State College

St. Louis Conference On Quality Concrete

Role of Admixtures Discussed

A HIGHLY informative conference on the characteristics of good concrete and the role of admixtures in improving various properties was held at Washington University, St. Louis, Mo., on February 16. The attendance of approximately 350 represented all interests in concrete construction in the metropolitan area, including architects, engineers, contractors, ready-mix producers, precast manufacturers, and others. The conference was arranged by the university's Department of Civil Engineering in co-operation with the University College. The head of the C. E. Department is Professor Henry M. Reitz.

In the lead-off paper, Professor Alvin W. Brust, Washington University, pointed out that the production of concrete dates back over 200 years from the time Italians started using mixtures of lime, sand, and volcanic ash in works and buildings. He mentioned that portland cement was originated under an English patent issued in 1824. His answer as to what is good concrete, was *concrete which will satisfactorily perform its intended function for a predictable length of time at an economical cost.*

Although strength is commonly considered the measure of the quality of concrete, other properties are also of great importance. Using water, cement, and fine and coarse aggregates from one set of sources, large differences in workability, strength, durability, and over-all economy results from what may seem to be small differences in proportioning, mixing, placing and curing methods. Water acts as a lubricant between the particles of cement in the paste, and mortar acts as a lubricant between the larger pieces of aggregate; but a workable concrete requires a balanced mortar wet enough to flow easily, but stiff enough to keep the coarse aggregate in suspension. The two methods of specifying the desired quality of concrete given in A.S.T.M. specification C-94 for ready-mix are as follows: (1) if the purchaser assumes responsibility for the design, he specifies the quantities of materials in the mix, including the maximum amount of water; or (2) if the concrete producer assumes responsibility for the mix, the purchaser should specify the size of coarse aggregate, the slump, and the minimum strength desired.

In emphasizing the importance of the handling and treatment of concrete after mixing, Professor Brust remarked that much good concrete never achieves more than half of its potential good qualities because the too-early removal of forms or the lack of other protection allows the water to evaporate too soon.

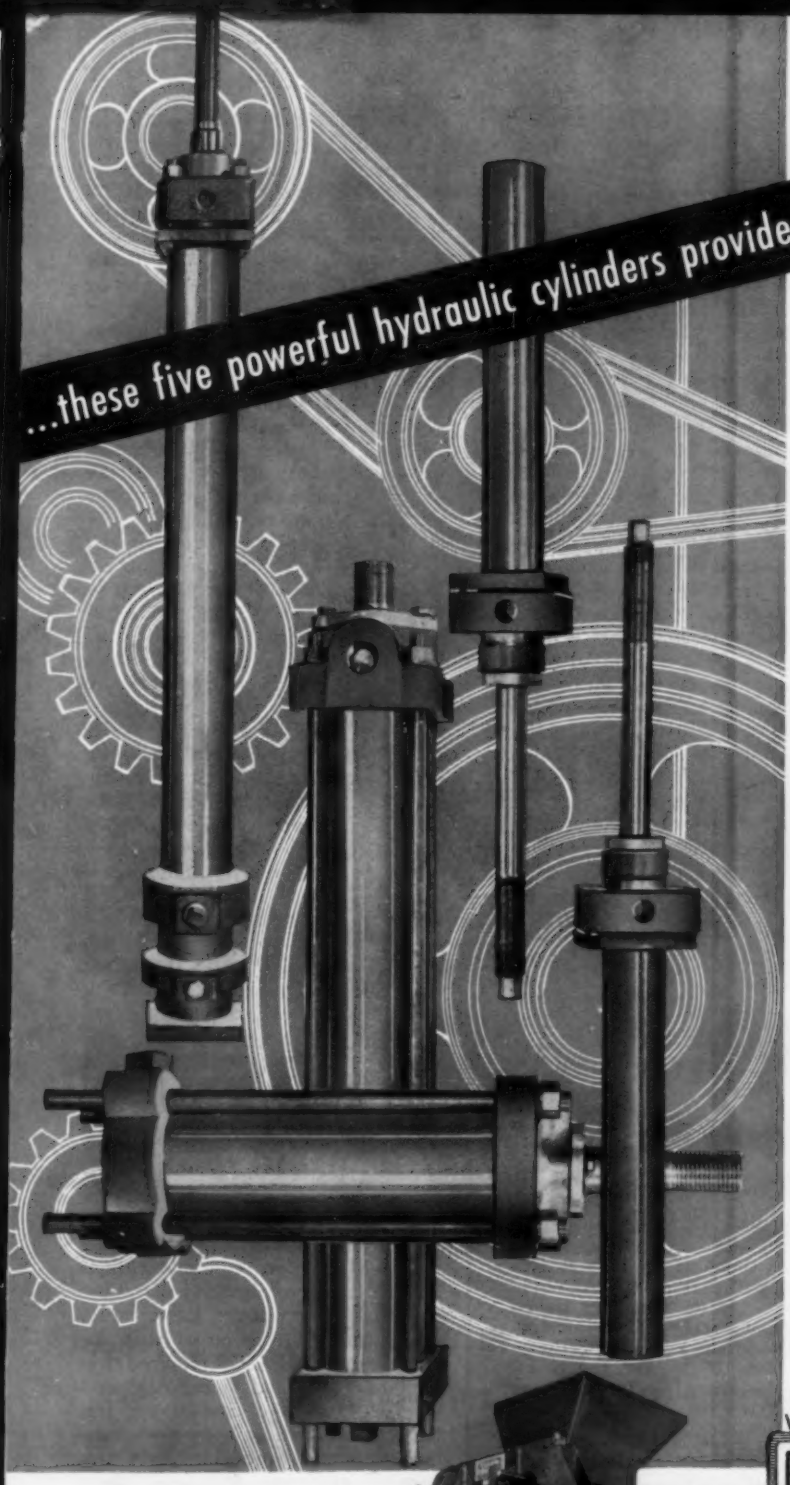
The chemistry of cement was described by Walter J. McCoy, Lehigh Portland Cement Company, with the aid of blackboard diagrams. He listed the raw materials as limestone, clay, and sand, or others containing calcareous, argillaceous, and siliceous elements. These are ground and then blended to produce a clinker with 60 to 65 percent lime, 19 to 23 percent silica, and 6 to 9 percent alumina and ferric oxide. The carefully proportioned raw mix, either dry or as a slurry, is fed to a horizontal kiln, in which, at a temperature of approximately 2,700 deg. F., it clinkers.

In passing through the kiln the lime chemically combines with the silica and alumina to form tri-calcium silicate (C_3S), di-calcium silicate (C_2S), and tri-calcium aluminate (C_3A), which are the three important compounds in cement. In the final grinding of the clinker into cement, a small amount of gypsum is added, of the order of 4 or 5 percent. The hydration which occurs when cement is mixed with water consists of the cementing compounds going into solution, and then precipitating out as a complex of gels and hydrates which provide the gluing action that is the basis for the strength-gaining properties of portland cement.

Of the three basic compounds in cement the C_3A acts fastest in the presence of water. This speed is retarded by the gypsum which has been added. Air-entraining cement is produced by intergrinding with the clinker a very small amount of a soluble resin or other air-entraining agent. The five basic types of portland cement are known as Type I, regular portland; Type II, modified portland; Type III, high-early strength; Type IV, low-heat; Type V, sulphate-resistant.

The characteristics of the several types are obtained by varying the proportions of the raw mix so that the relative amounts of the three

...these five powerful hydraulic cylinders provide Columbia Block Machines with...



smooth positive trouble-free performance

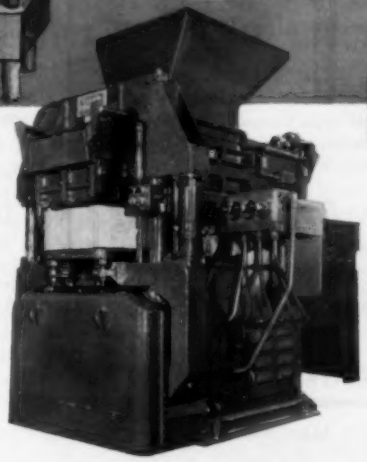
YOU WON'T FIND the clank and clatter of cams, gears, levers and pulleys on Columbia machines because these five cylinders provide the power and action to do the job with precise, smooth, quiet operation.

Here's the power of hydraulics engineered to do the same job as equipment more than twice as large. Hydraulics make the difference in wearing parts, too, as this modern concept of engineering eliminates hundreds of moving, wearing, power wasting parts.

AND HYDRAULICS make possible Columbia's streamlined design, its outstanding production capacity in a much smaller machine . . . equipment so moderately sized that it can be easily adapted to most any existing plant layout. Columbia hydraulics are another reason why we say—

Columbia's Performance is Built-in!

Plant Layout & Engineering Service
If you are planning a new plant or remodeling existing installations, consult Columbia's engineering staff. No obligation of course. Write, wire or phone.



Columbia
MACHINE

Home office:
107 S. GRAND, VANCOUVER, WASH.
Phone: OXford 4-1501

Factory Branch and Warehouse:
MATTOON, ILLINOIS

Parts Depot and Offices:
BURBANK, CALIFORNIA

District Offices in: Wisconsin, Illinois, South Carolina, Mississippi, Florida, New Jersey, Virginia, Texas, Massachusetts, Montreal, Quebec, Vancouver, B. C.

basic components are varied. Type III is usually ground finer than Type I in order to obtain faster hydration. Types I and II account for about 92 percent of all cement made.

The effects of various admixtures on the properties of concrete in the plastic state were discussed by Professor Charles H. Scholer, Kansas State College, Manhattan, Kans., a past-president of the American Concrete Institute. He defined the concrete to be considered as being designed for a specific purpose, with only enough water added to give the desired slump. He pointed out that a common error in placing concrete is compliance with the demand of the crew for excessive water, which tends to produce segregation of the non-plastic aggregates and also to reduce the compressive strength.

The gypsum interground in the cement cannot control the rate of setting and strength development under all conditions. For instance, in hot weather the rate of hydration is accelerated, so that initial stiffening may occur before there has been time for satisfactory placing and finishing. For such condition an admix to serve as a retarder may be justified. It was recommended that proven materials from reliable manufacturers who can assist with engineering service be used. Under the opposite conditions of cold weather an accelerator might be justified to speed up the development of strength, even though the concrete were delivered in warm condition of about 70 deg. F. Calcium chloride is the most widely used admix for this purpose.

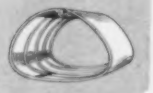
Professor Scholer stated that materials for improving the plasticity of concrete have been used for many years. Diatomaceous earth has served this purpose but frequently requires more water. Fly ash was also used, even before its pozzolanic action in contributing to strength was realized; it usually tends to reduce the required water because its gains are chiefly spherical. Various proprietory articles are also available as plasticizers. All air-entraining agents are excellent plasticizers. But in air-entrained concrete it is usually found that a pozzolan will suppress air-entrainment, so that more air-entraining admix will be required to produce the specified air content. Professor Scholer emphasized that the proper use of admixtures to improve the performance of concrete calls for better engineering control if their benefits are to be realized. He stated that "poor engineering supervision and control drives out good construction practices and good contractors."

The final speaker was Willis T. Moran, Bureau of Reclamation, who discussed the changes in properties of hardened concrete by the use of admixtures. He showed slides of graphs taken from various reports of the Bureau of Reclamation of investigations of four major types of admixtures. He spoke of calcium chloride as the principal material used as an accelerator; it speeds up the development of strength and also increases the strength at all ages; but it usually increases shrinkage and reduces the resistance to sulphate attack.

Improvement in concrete by the use of air-entraining agents under severe exposure has been indicated by good air-entrained concrete withstanding up to 2,000 cycles of freezing and thawing, whereas a concrete containing poor aggregates and no air may withstand only 40 cycles; air-entrainment also reduces permeability. The Bureau is regularly using pozzolanic materials, such as suitable volcanic ashes and artificial fly ash; with a 30 percent replacement of good fly ash for a like weight of cement, the development of strength is slower, but at 90 days the strength is usually greater than with straight cement; but the presence of fly ash requires adequate curing. Pozzolans have also been beneficial in controlling the alkali-aggregate expansion reaction which the Bureau has encountered in some localities.

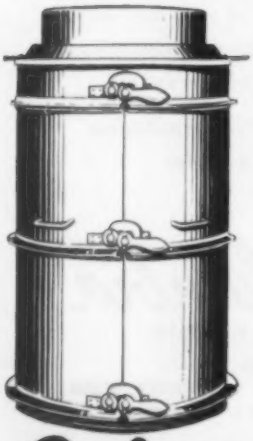
No Matter What SIZE...

No Matter What SHAPE...



QUINN CONCRETE PIPE FORMS

Set The STANDARD For Producing Quality Pipe!



Over 50 years of experience and "know-how" go into the production of every Quinn Concrete Pipe Form. That's why the **Quinn Heavy Duty form** is recognized as the STANDARD the world over in design and operation . . . **for producing highest quality concrete pipe at the lowest possible cost.** Used in making pipe by vibration, spading or tamping. Sizes for pipe from 10" to 120" and larger. Tongue and groove (as shown) or bell end pipe in any length desired.

No matter what size, shape, or length you need, there's a Quinn form made to fit your requirements. That's why hundreds of pipe manufacturers, from the smallest to the largest, call on Quinn for all their concrete pipe form needs.

FREE! New Quinn Pipe Form Catalog

Illustrates our complete line of equipment. Contains pages of valuable information on concrete pipe specifications, cost and production. Write today for your free copy and estimates.

Quinn

WIRE & IRON WORKS

BOONE, IOWA

Also Manufacturers of

QUINN CONCRETE PIPE MACHINES

Industrial Radio

(*From page* 327)

installed, we handled the maintenance ourselves. However, it soon became obvious that there was not enough work for a full-time service man. Albuquerque Communications Service, a Motorola service station, now has the contract to maintain our system. The contract calls for the six-month F.C.C. required frequency checks and emergency service. As a part of its service, this concern also listens in on their various customer frequencies over two monitor receivers. Whenever there are indications that a mobile unit is not operating satisfactorily, the unit is called in for servicing.

Two-way radio has been thoroughly integrated into our operations. It has become a routine tool, used by many of our employees. However, even after five years we believe that we have not yet utilized it to the greatest extent possible. We are always interested in uses developed by other firms for such a setup.

Dowflake in 25-lb. bags assures accuracy, eliminates awkward measuring buckets

Better concrete faster . . . and easier! That's exactly what you get with Dowflake® in handy 25-lb. bags.

This package of Dow calcium chloride serves as an accurate measure . . . makes work lighter and faster at the plant or on the job site. Just add the contents of one bag for every 5-yard batch of 5-sack mix concrete to obtain 1% Dowflake. For 2% concentration, add the contents of two bags. Simple!

No messy buckets to handle. No spillage losses. And most important, this easy way assures concrete the faster set, improved workability, density and strength that only calcium chloride can provide. Take advantage of it, especially on long hauls through heavy traffic when it's usually necessary to add the Dowflake at the project site.

Order Dowflake in 25-lb. bags and get better concrete faster . . . and easier! THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. IN 704V.

YOU CAN DEPEND ON DOW

Calling All Ready-Mix Producers—

What Is Your Public Relations Score?

LAST year the National Ready Mixed Concrete Association undertook to examine the causes of both good and bad public relations in the industry it represents. The association sent to each of its 668 member companies on August 13 a questionnaire designed to develop the basic facts and to help the association's new Committee on Public Relations launch its program for the industry. Ralph H. Anderson, Columbus, Ohio, chairman of this committee, has stated that the establishment of good public relations is one of the most important subjects which the industry faces.

At the Los Angeles meeting Mr. Anderson presented a report covering the returns to this questionnaire, and told all that his committee is doing and intends to do in the future to help the industry solve this important problem. On January 7 the N.R.M.C.A. staff distributed an analysis of these returns—aggregating on that date 46.9 percent of the questionnaires sent out. The 313 companies reporting accounted for 509 plants, and it is this number (on a plant basis) which is used in all percentages applying in the analysis which follows.

The questionnaire, as approved early last summer by the members representing the ready-mixed concrete industry in all sections of the United States, was broken down into two parts: (1) operation of the plant and (2) operation of trucks. Under each of these categories were questions pertaining to complaints or problems arising from the operation, and space for suggestions on setting up a program to enlist the good will of the public. The following brief summary of the percentage applying to each of the questions and answers received is taken from the staff analysis of the returns. We feel that it contains some interesting data, and we urge each producer to read the entire analysis carefully in order to gain a full comprehension of all the ramifications of these problems.

Type and Location of Plant The returns indicated that 71 percent of the plants reporting are transit-mixed operations, 26 percent are central-mixed, and 3 percent employ both methods of operation. As to location, 36 percent are located in industrial areas, 25 percent in semi-industrial, 14 percent in commercial, 9 percent in rural, 9 percent in suburban-residential, and 7 percent in urban-residential areas.

Zoning Ordinances Only 22 percent of the plants reporting are not subject to zoning ordinances, whereas 78 percent operate under such ordinances. The fact that 81 percent of the plants subject to zoning regulations operate under ordinances administered by the local municipality demonstrates the importance of good community relations. It is interesting to observe that of all the plants located in zoned areas, 72 percent come under a "conforming use" classification, rather than a "pre-existing, non-conforming use" rating.

Expressed Opposition Only 16 percent of the plants reporting indicated that the firms have been involved in zoning hearings. Opposition was expressed at these hearings on the following bases, in the order of frequency: dust and dirt, 59 percent; truck traffic, 56 percent; operation in residential areas, 40 percent; noise, 35 percent; appearance of the plant, 9 percent; opposition formed by competition, 5 percent; operation in agricultural areas, 4 percent. Other less frequent reasons were plant height, proximity to schools, danger to children, and operation in commercial areas.

Zoning Restrictions Only 14 percent of the plants have either been restricted by zoning regulations or expect to be so restricted in the near future. The most prevalent restriction involves the use of streets; 57 percent listed such restriction. Restriction on the hours of plant operation was listed by 56 percent of the plants, while other methods of existing or expected restrictions included enclosure of operations, smog and smoke control, grade level, plant appearance, limitation of truck repairs, limited number of trucks, and permit requirements.

Air Pollution Forty-eight percent of the plants reporting indicated that they are now or expect to be subject to air pollution regulations. Of these, 84 percent are already subject to zoning ordinances, as well. Among the plants subject to air pollution regulations, the difficulties included smog control; smoke, steam and soot from heating plants and smokestacks; and cement dust. The expense of dust control equipment, or difficulty in obtaining efficient equipment were among the reasons cited.

Truck Operations In the second part of the questionnaire, relating to the operation of ready-mixed concrete trucks, and to legal restrictions on the movement of such units, one-half of the reporting plants indicated that there are now restricted routes in their communities where such or similar trucks are not permitted to operate. In 35 percent of the cases either no action has been taken to obtain relief from such restrictions where they interfere with operations, or remedies attempted were ineffective, and absolute conformity was necessary. The restrictions were strictly obeyed and new routes were established for the trucks in 25 percent of the cases. In 16 percent of the instances the restrictions do not interfere with truck operations, and no action was necessary. In 15 percent of the cases affected restrictions are complied with, but some relief is obtained by cooperation with city officials or police, or through a local trade association. In 4 percent of the cases a positive, direct attempt is being made to have the restrictions changed, and in less than 1 percent of the cases legal action is being taken by the operator.

Disposal of Wash Water The problem of disposing of wash water presented difficulties to only 13 percent of the plants reporting, the most prevalent difficulties in this regard being inadequate settling in sump pits and settling tanks, or shortage of land or other areas for dumping. Some 20 general methods were reported for disposing of wash water. Many plants used more than one of these methods. The difficulties experienced by the operator in using each method was also indicated by the person reporting.

In order of frequency listed by all plants reporting, the seven major methods of the 20 described for the disposal of wash water included the following: dumping in a private area owned by the plant, which may or may not be periodically cleaned out, or using the residue as rip-rap on banks of rivers (35 percent); a settling basin, including sump pits or settling tanks (18 percent); dumping the wash water, without settling or filtering of any kind, directly into streams, rivers, lakes, or other public bodies of water (11 percent); using a settling tank, and later draining the water into the public sewer system (8 percent); using a settling tank or basin, but after separation of solids, permitting the water to drain into public bodies of water (7 percent); dumping wash water any place, not on plant property, and hoping for its disposition by natural drainage (6 percent); disposing of wash water through storm sewers or highway drainage systems, without prior settling or filtering (3 percent).

Other methods less frequently used to dispose of wash water included dumping in areas needing fill material, into open ditches, drainage systems, seepage pits, public dumps, private lakes or ponds, the ocean, etc. In only 0.2 percent of the plants is the wash water used in the next load of concrete, an obvious but unsanctioned method of disposal.

Difficulties experienced by operators in using the above various methods of disposal of wash water included shortage of land, inadequate separation of solids, water pollution, fouling of storm sewers, and general complaints from the community, and action taken by local authorities to terminate obnoxious practices. Where efficient and approved methods of disposal of wash water were followed, such as using seepage pits with adequate filtration of water, periodic removal of solids to public dumps or for use as fill materials, no difficulties were reported.

Disposal of Left-Over Concrete Replies of companies gave 14 general methods for disposing of left-over concrete. Many plants used more than one method of taking care of surplus concrete; hence, these plants have been included in each category in the tabulation of percentages.

In the greatest percentage of plants reporting—35 percent—left-over concrete is used for yard-paving projects and for general plant improvements. The next most-used method of disposal—in 33 percent—is to dump it in private dumping areas, worked-out pits, plant-owned lakes, etc. Left-over concrete is used for fill or grading material, or dumped on river banks as rip-rap in 13 percent of the cases. Concrete products are made of it in 13 percent of the plants. It is hauled away to a public dumping area in 11 percent of the cases. Settling pits are used by 6 percent of the operators. Five percent dump it directly into public bodies of water. It is given away as a gesture of good will to the community, to various projects in 4 percent of the cases. Nearly 3 percent of the plants reporting permit drivers to take the concrete home at no charge. Left-over concrete is sold at a reduced price to anyone who will buy it in 2 percent of the cases.

Difficulties experienced include unauthorized use of left-over by drivers, exhaustion of dumping areas, expense and difficulty of handling, accumulation of concrete faster than it can be used, water pollution, and drivers' abuse of privileges of handling. Nearly half of all plants reporting permit left-over concrete to be dumped at locations other than the plant area. About 10 percent reported that they had received complaints as to this practice.

Dust, Dirt Complaints The greatest cause of complaints about plant operations was due to dust and dirt, 23 percent of those reporting stating that this nuisance was substantial, as contrasted with the number of complaints referring to truck operations away from the plant area. In the order of frequency of these complaints, the locations of the plants reporting them were those in urban-residential locations, then semi-industrial, industrial, suburban-residential, commercial, and rural, in that order. Usually, only "substantial" complaints were reported.

Remedies employed by the plants receiving complaints about dust or dirt, in the order of frequency, were as follows: enclosure of plant operations, the most common remedy, adopted in 22 percent of the plants; technical improvements in handling cement or cement hoppers, installed by 18 percent; paving dusty yard areas, also oiling, washing or calcium chloride application, 42 percent; installation of dust collectors or other technical equipment, 6 percent. In 16 percent of complaint cases, the operators, after investigating the validity or practicability of a remedy, ignored the complaint.

Plant Noise Substantial complaints about noise from plant operations were received by 15 percent of those reporting. The location incidence of such plants, in order of frequency, followed the same pattern as in the complaints against dust and dirt. Remedies used by the plants, in order of frequency, appeared to be adjustment or improvement of equipment producing the objectionable noises, improvement in handling railroad cars, limiting or discontinuing night operations, enclosure of plant areas, prohibition of racing of truck engines, restriction of car shakers, and discharging chronic noise-makers among employees.

Plant Appearance Less than 3 percent of those reporting answered that they had received substantial complaints

about the appearance of their plant. In remedying such objections as arose in this regard, operators took the following steps, in the order of frequency: landscaping grounds, 58 percent; painting plant buildings, 25 percent; adopting generally better housekeeping, 25 percent; enclosing the plant or stockpile area, to block public view, 17 percent; erection of new buildings or demolishing old structures, 8 percent.

Other Complaints In answer to a general question as to other causes of substantial complaints not covered in the questionnaire, 2 percent of the replies listed five sources of complaint: spotlights on the plant grounds, 40 percent; night operation, 20 percent; spillage, 10 percent; danger to children, 10 percent; car shaker and other vibrations, 10 percent. Complaints about spotlights were remedied by readjustment of the lights. Spillage of gravel from incoming trucks was remedied by regulation of loads. Enclosing the plant operations remedied the complaint that the plant afforded dangers easily accessible to children.

As to the sources of complaints, 23 percent of all plants answered, indicating that these came (in order of frequency) from: neighbors in the immediate vicinity, 80 percent; civic and conservation groups, 16 percent; zoning boards and particular individuals or business groups made up the remainder.

Spillage Of all plants reporting, 24 percent reported that they had received substantial complaints about spillage, dust, and dirt from the trucks operated on the streets or highways. Remedies for this problem included cleaning by plant employees in 40 percent of the cases involved; more careful loading prevented spillage, 23 percent; driver education in operating trucks slowly around corners to prevent spillage, 23 percent. More careful policing of trucks before dispatching, the use of larger drums for given loads, and technical improvements of the truck or mixer remedied the majority of the remaining complaints. In only 13 percent of the cases were the complaints ignored.

Truck Noise This was the second-most-common complaint received about truck operation. However, only 8 percent of the reporting plants indicated that this type of complaint had been received. In 37 percent of these cases reported no remedy was taken, the complaints were ignored, or it was felt that there was no practical remedy available. In an equal number of cases, truck improvements through better maintenance, more careful inspection, or installation of mufflers accomplished the remedy. In 20 percent of the cases, driver education eliminated objectionable truck exhaust noise. Re-routing around the source of complaint accomplished a remedy in 12 percent of the complaints made for this reason.

Other less frequently reported cases of truck noise were diminished or eliminated by one or more of the following remedies: limitation of truck speeds; exhaust projected upward, rather than to the rear; and reduction of night operations. Co-operation with local officials alleviated other objections to noise. Offensive odors from exhaust fumes were reported by plants around New York City, where more attention is paid to this offense. This complaint, found in only 3 percent of the plants, was remedied for the most part, by more careful maintenance of the diesel engines producing the objectionable fumes.

Other complaints against ready-mixed concrete trucks included breakage of curbs, tearing up lawns, breakage of windshields from flying rocks, and spillage of mixing water on parked automobiles. It was determined in this connection that complaints from the community sometimes originate in the ease of identifying a ready-mixed concrete truck. About one-fifth of the reporting plants indicated that they had received the following complaints (in the order of frequency): speeding, 62 percent; truck size, 31 percent; truck noise, 21 percent; road-hogging, 6 percent; and lack of courtesy, 6 percent.

Necessary Programs The following three questions on public relations plans were asked in the questionnaire: (1) Do you have an active program for enlisting the good will of your community? (2) Do you have an organized program for safe driving of your trucks? (3 Have you made an effort to develop good relations with the local press?

Only 18 percent of the plants reporting answered "Yes" to all three questions. All three were answered "No" by 16 percent. The only redeeming feature was that 83 percent answered "Yes" to at least one of the three questions.

Nearly 46 percent of all plants reporting indicated that they had a public relations program. These reported some 27 general types of programs in their written explanations, consisting mainly of the following: civic organizational activity through active participation and membership in local civic groups, working for better community relations (32 percent); orienting plant and truck operation and the conduct of the drivers toward the goals of the program (32 percent); financial support, in the name of the company, of community, civic, and charitable projects (12 percent); and sponsorship in community activities, 10 percent.

Various other ways of co-operating in community projects for good public relations were listed. These included free concrete, advertising in local papers, making purchases locally, making trucks available for local civil defense water hauling, etc.; free bus stop benches, free snow plowing in the plant vicinity, etc.

Safe Driving Programs Only 69 percent of the plants reporting that they had safe driving programs submitted explanations of such programs.

Listed in the order of frequency of the types of programs used for the promotion of safe driving are the following: safety meetings, lectures, or dinners held regularly for all employees (48 percent); safety programs of insurance companies (27 percent); safety contests, with awards presented to employees on the basis of their driving records (22 percent); bumper-stickers, truck posters, etc., on trucks, in plants, and for public use to promote safety (20 percent); hiring a safety engineer to supervise safety practices (11 percent); and newspaper publicity in advertising safety contests and safe driving awards (17 percent).

Co-operation With Press Of the plants reporting, 35 percent said they have made an effort to develop good relations with the local press. The listings (in the order of frequency) with which each answer was reported is as follows: personal friendships with members of the press (23 percent); favorable results already achieved (21 percent); press relations good (15 percent); local press kept informed of the firm's activities by means of releases (10 percent). Ten percent gave no explanation of the status of public relations; 6 percent stated that the results of their public relations program were unknown; and 3 percent stated that no noticeable results had been attained.

Activity of Executives The last question on the questionnaire requested the reporting plants to list local organizations in

TOMORROW'S BUSINESS shapes up differently!

The new SMITH Mixer, available now, is your answer to future profits

The shape of business to come is in clover-leafs, super highways, freeways, expressways, etc. This huge new program means business — for ready-mix operators who can deliver the *right product.*

The new highway jobs specify low slump, "Inspection Type" concrete. To be ready for it, *to assure future profits,* you're going to need the right kind of equipment.

The great new Smith mixers are the answer

The new Smiths are available now — built *especially* for low slump concrete. Featuring the fastest charging and fastest discharging mixer made, they carry up to agitator loads without a door.

Larger discharge opening

New design permits free-flow charging and discharging — even with 0″ slump concrete. And, design of the discharge end eliminates any possible constricting of materials.

★ *Shorter, big diameter drum* means faster free-flow action. Smith T-shaped blades pull aggregates to big diameter section of drum, where they are lifted out of the mass and turned over.

★ *Better weight distribution,* thanks to the shorter unit, means more weight can be shifted to front axle (or a shorter wheel-base truck can be used). You can carry greater legal payloads.

Choice of sizes: 4½, 5½, 6½ yards. Front PTO or separate engine drive.

SMITH

Since 1900, the pioneer designer and foremost manufacturer of the world's finest mixers.

THE T. L. SMITH COMPANY • Milwaukee 1, Wisconsin • Lufkin, Texas

affiliated with Essick Manufacturing Company, Los Angeles, California.

A-4013-1P

which their executives are active. This question sought to determine the extent of their interest and participation in community affairs. Of the reporting plants 43 percent have executives active in three or more organizations of this nature; 63 percent are active in the local Chamber of Commerce; 11 percent have an executive active on the local planning commission; but only 6 percent answered that any of their executives were active on highway or traffic committees.

Anchor Concrete Products Announces 4 Promotions

The promotion of four executives of the Anchor Concrete Products Inc. in Cheektowaga, N. Y., was announced by Frederick W. Reinhold, president.

Grant N. Reinhold, who has been a vice-president and director of production, was named executive vice-president. He has been with the company since 1940 and a vice-president since 1948.

Richard J. Frazier was appointed vice-president and director of production. He has been with Anchor for the last year. He formerly was with the Washington (D. C.) Brick Co. He also is in charge of Anchor's research, new production development and quality control programs.

Dan L. Sutter, who has been chief engineer for seven years, was named vice-president and director of engineering.

William P. Schiesel was named secretary and a member of the board of directors. He joined the company in 1948.

Stillwater, Okla., was the meeting place of the seventh annual Southwestern Concrete Conference, held recently at Oklahoma A. & M. Among the speakers were the following: R. P. Scholer, Kansas State College; R. A. Willis, E. C. Lokken, Portland Cement Association; and E. M. Fox, Master Builders Company, Cleveland, Ohio.

A conference on good concrete and admixtures was held at Washington University, St. Louis, Mo., on February 16. Speakers included Alvin Brust of the university faculty; Walter G. McCoy, Lehigh Portland Cement Company; C. H. Scholer, Kansas State College; and W. T. Moran, U. S. Bureau of Reclamation.

Directors of Buildex, Inc. Elect Park, Kincaid To Executive Positions

Two new officers were elected January 28, 1957, at the annual meeting of Buildex, Inc., Pittsburg, Kans.

Ben F. Park was elected vice-president in charge of sales and Cecil W. Kincaid was elected vice-president in charge of operations.

Buildex operates a large modern rotary kiln plant at Ottawa, Kans., for the production of lightweight expanded shale aggregate (Haydite). George K. Mackie Jr., is president, and John W. Mackie Jr., secretary and treasurer.

The product, also trademarked "Buildex," is used primarily in lightweight concrete masonry. Increased usage is also being made in reinforced structural concrete for multi-story buildings and bridge road decks, where dead load reductions are showing substantial savings in construction costs.

Alpha Portland Cement Offers Winter Concreting Booklet

Cold Weather Concreting, the second pamphlet in the Craftsmanship in Concrete series published by the Alpha Portland Cement Company, contains illustrated suggestions for the successful placing, finishing, and curing of concrete in cold weather.

The first booklet of the series, *Steel Trowel Finishing . . . How to Avoid Dusting and Crazing*, published last year, is still available.

Both pamphlets may be obtained at no cost from the Alpha Portland Cement Company, 15 S. Third St., Easton, Pa.

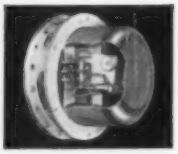
At the annual meeting of the shareholders of The Marietta Concrete Corporation, Marietta, Ohio, the following officers were elected: Frank L. Christy, chairman of the board; F. Leonard Christy, president; C. Boyd Ross, executive vice-president; R. Neil Christy, executive vice-president and treasurer; J. Darwin Ross, vice-president; and Charles D. Fogle, secretary. The newly-elected officers were also named directors.

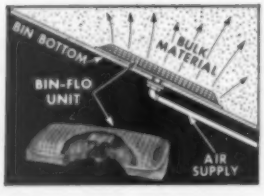
Don Cerven, formerly manager of the Wilson Concrete Company plant at Grand Island, Nebr., was recently promoted to the position of production manager and purchasing agent for the entire Wilson Concrete Company system. He will have headquarters in Omaha. Mr. Cerven will be succeeded at Grand Island by Martin Wilcox.

NEW BIN LEVEL INDICATOR

New ROTO-BIN-DICATOR®
Motor driven paddle-type bin level indicator
For automatic bin level indication or control of bulk materials. Particularly suited to applications on bins subject to pressure or vacuum.
EXPLOSION-PROOF
U. L. listed units available

BIN-DICATOR®
The original diaphragm-type bin level indicator. In successful use for 20 years.

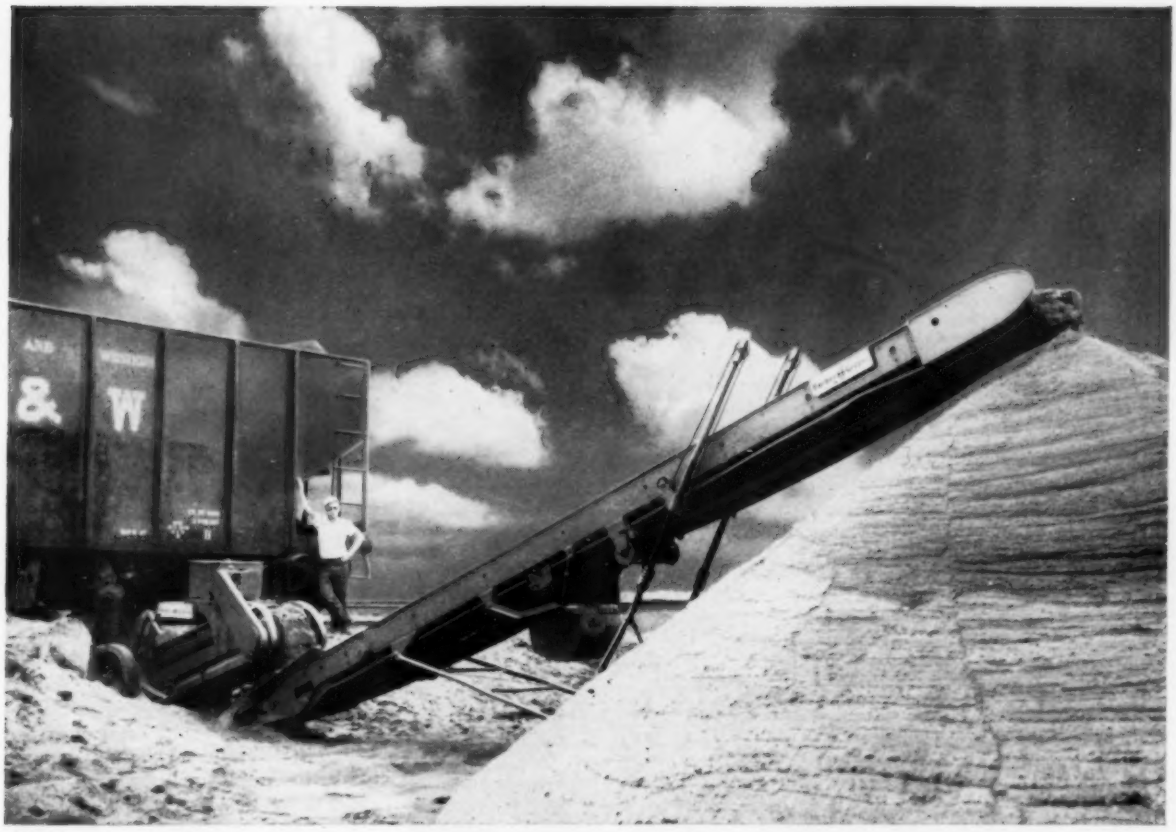




BIN-FLO®
Assures gravity flow of pulverized materials
Bin-Flo Aerator units in bins, chutes, etc., use small volume, low pressure air to restore flow to dry, pulverized materials which tend to pack and bridge in storage.

THE BIN-DICATOR CO.
13946-W1 Kercheval • Detroit 15, Mich.
Write for detailed Literature or call
VAlley 2-6952

WE SELL DIRECT • PHONE ORDERS COLLECT



Ohio contracting firm, S. E. Johnson Co., reports:

"We unload the largest hopper cars in 45 minutes"

"Our Barber-Greene unloader and conveyor easily handle 800 tons a day with just intermittent operation. So far, we have moved over 85,000 tons of material and have had no maintenance expense to speak of."

This statement isn't a manufacturer's specification; it is a factual, unvarnished, report typical of the many comments on outstanding performance of Barber-Greene car-unloading equipment.

Wherever it's used, the combination of the 363 Portable Conveyor and the 358 Car Unloader provides a sure way to cut unloading costs and to release cranes and other, more expensive equipment for more efficient operation on other jobs. Whatever these Barber-Greenes handle—coal, sand, gravel or other bulk materials—they do the job virtually automatically as a one-man operation.

Both conveyor and unloader are mounted on pneumatic tires for easy maneuvering about the yard . . . for fast between-job towing at truck speeds.

B-G Unloader operates above or below the rails. Portable conveyor can be equipped with screens, power hoist and other accessory equipment. Capacity ranges to 150 t.p.h. Powered by gas or electricity.

56-13-PO

Barber-Greene BG

AURORA, ILLINOIS, U.S.A.

CONVEYORS . . . LOADERS . . . DITCHERS . . . ASPHALT PAVING EQUIPMENT

SMALL BLOCK BUSINESS PROSPERS

size of market no handicap to Ohio producer

By WALTER E. TRAUFFER

The City Block and Supply Company's plant, showing the bulk cement elevator and the bin.

Another ON THE SPOT Report

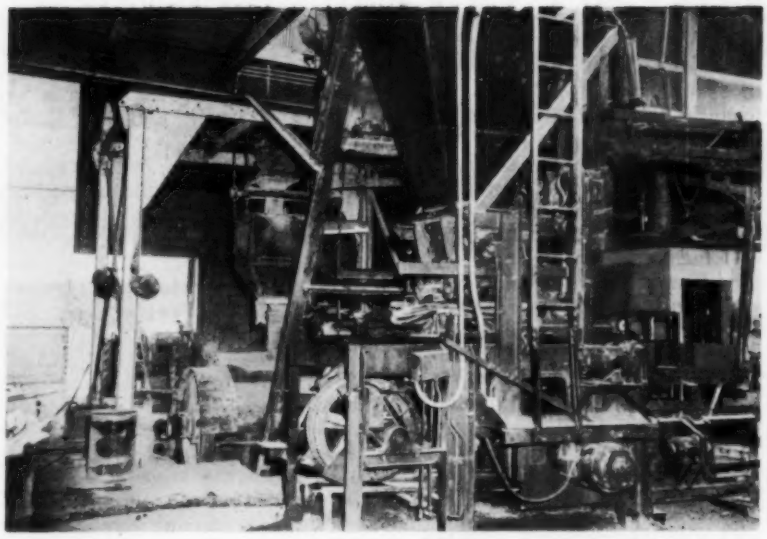
THE City Block and Supply Company of Medina, Ohio, is an excellent example of a small-town concrete products manufacturer's success without going outside a limited marketing area. This town of less than 5,000 population is surrounded by larger cities and large producers, but it has developed such a local demand that a new plant was recently built with a capacity of over 480 blocks per hour. Even this facility has to be operated for two shifts daily during several months of the year. Two of the owners of this firm—E. J. Campbell, vice-president, and E. D. Richard, secretary—got into the block business in 1951 by purchasing the Fodor Block Company plant, changing its name to the Medina Concrete Products Co. In January, 1955, ground was broken for the new plant which went into operation in May of that year. The present company name was adopted with A. J. Snyder as president and D. L. Tubbs as treasurer. On January 19, 1957 the company opened a modern new office and warehouse across State Road from the plant.

Both gravel and lightweight expanded slag blocks were made, but the opposition of union masons to the heavy blocks, and the nuisance of carrying two complete lines, caused the company to drop the gravel units. Sales are almost entirely wholesale, through 28 dealers in three counties. A building supply sideline was recently added and is going over well. Items carried in the modest inventory include basement sash, mortar, cement, windows, lintels, drain tile, sewer pipe, Du Pont paint, etc. In addition to the above the company is now the distributor for Crestwood custom-fabricated homes of Greenville, Pa.

The aggregates for this plant are received by truck and are dumped into a compartmented ground storage. A Ford tractor with a Super Six front-end loader is used to feed the aggregates to the Gocorp 28-cu. ft. mixer. Bulk cement is received in trucks and is discharged to a hopper from which a screw conveyor and elevator feed to a 300-bbl. Blaw-Knox bin. A screw and weigh batcher feed the cement to the mixer. A skip bucket discharges the concrete

The new office building and warehouse across the highway from the plant.

This is the 2-block all-hydraulic block machine, with the cement batcher, the mixer, and the skip (background).

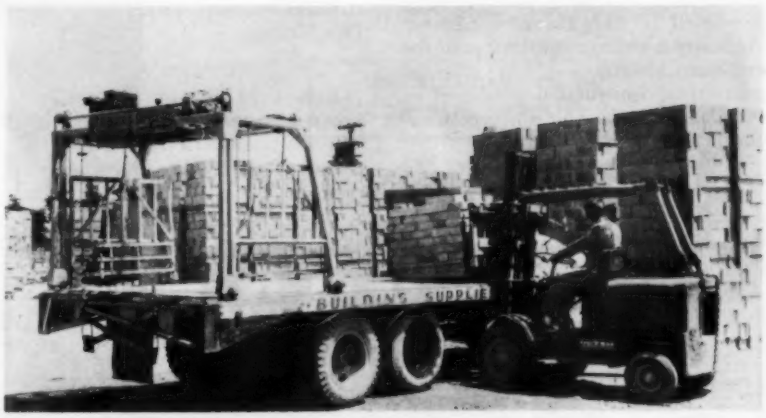


into the hopper of the Gocorp Prince 2-block all-hydraulic block machine. The hydraulic offbearer has a magnetic pallet return to the front-end pallet feed.

The loaded 72-block welded-steel racks are taken to the three 1300-block curing rooms by a 4000-lb. Towmotor lift truck. The rooms have Universal doors. Steam for curing is provided by a 30-hp. Clayton forced recirculating steam generator with an Elgin water softener. It has been found that the softener pays for itself in spite of the fact that city water is used. An additive, Super PH-IX—made by Associated Chemists, Inc.—is added to the boiler feed water to prevent corrosion of the racks in the kilns. Steam is fed in from the top of the rooms through a 1½-in. pipe for 3½ hr. Then the blocks are allowed to soak overnight.

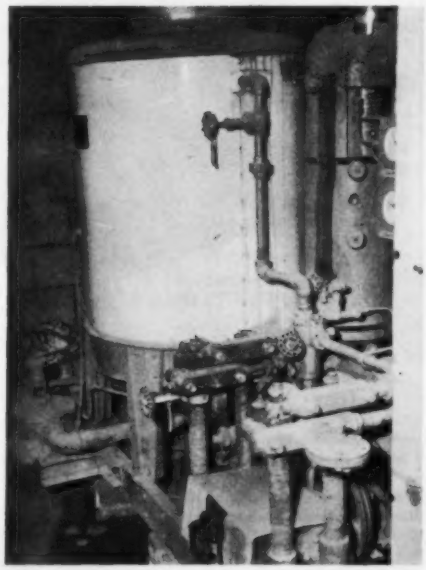
The cured blocks are taken to a concrete slab in front of the kilns where they are made up into 90-block cubes. One man cubes 4500 blocks daily. A Knickerbocker Truck-Man 4000-lb. lift truck is used to yard the cubes and later load them onto trucks for delivery. The company has three delivery trucks, one of them a Studebaker tandem with a capacity of 720 standard 8-in. blocks. This is equipped with a Superlite unloader. The other two trucks are G.M.C. and Dodge; all are painted red and yellow for advertising value. When needed other trucks are hired.

The block machine averages 480



A lift truck loading cubed block on a haulage unit equipped with a mechanical unloader.

Left: This compression testing machine is used to check daily against manufacturing errors.



Right: The forced recirculating steam generator used in connection with the water softener.

standard 8- by 8- by 16-in. blocks per hour for a 9½-hr. day. With a mix consisting of all expanded slag the blocks average 1150 lb. per sq. in. gross area at 28 days. With this mix a standard 8- by 8- by 16-in., 2-core block weighs 28 lb. A complete range of sizes and types is made.

A Forney's compression testing machine is used to insure satisfied customers and has become a real sales feature. In addition to regular testing this is used to test blocks a day after they are made as a contsant check for possible manufacturing errors. These tests are followed up by periodical tests at the Standard Slag Company's laboratory in Youngstown and that of the University of Akron, as a final check.

101 Quality Concrete Courses Given on West Coast in 1956

More than 100 short courses and conferences on quality concrete were presented by the Portland Cement Association during the last year for engineers, contractors, city officials, and other construction personnel in Arizona, Nevada, and southern California.

John McNerney, Los Angeles district engineer of P.C.A., states that association representatives had presented 101 concrete schools and conferences in 1956, with a total attendance of more than 4,000 persons.

Most of these quality concrete programs are given by Robert E. Tobin, civil engineer, who is quality concrete specialist in the Los Angeles district office. He is assisted by Association field engineers.

Midwest Concrete Industries To Expand for Prestressing

Midwest Concrete Industries, Des Moines, Iowa, manufacturer of custom-made architectural concrete products, is enlarging its plant to permit the production of prestressed concrete members.

According to Gregor J. Gentleman, president, the 30-year-old firm will produce framing and roof decks for buildings, and girders after the expansion program has been completed. This will be the first prestressed concrete products plant in Des Moines.

Robert M. Bonus has been appointed president of the Hay-Con Tile Company, Detroit, Mich., succeeding David J. Warshaw, who has resigned.

Of Plants and People

A new plant for the manufacture of concrete and Waylite blocks has been constructed near Mankato, Minn., by the Mankato Concrete Masonry Company. The plant, which replaces the old one partially destroyed by fire last summer, consists of three buildings—the main manufacturing plant, a building to house the steam kilns, and an office-warehouse building.

Jeffries Concrete Products Ltd., Lethbridge, B. C., Canada, is rebuilding its plant, which was destroyed by fire in January. The plant was opened last October.

Officials of the Underwood Concrete Products Company have announced the completion of a $250,000 plant for the manufacture of concrete block at Mobile, Ala. Capacity of the plant is 1,000 blocks per hour.

The New Knoxville Cement Tile & Block Company, Knoxville, Ohio, has purchased the Cement Tile & Block Company, New Bremen. Products of the new firm, known as the New Bremen Coal & Builders Supplies, include septic tanks, and burial vaults, sandstone, limestone, brick, and tile.

A. O. Neuman, president of the Gonzales Cement Works, Gonzales, Tex., has announced that construction has begun on a new plant at San Antonio for the manufacture of concrete sewer pipe. When the plant is completed, company headquarters will be moved to San Antonio.

Transit Ready-Mix, Inc., Nashville, Tenn., a newly-formed concern, has purchased the Nashville Ready-Mix Company. Fleming Smith, president of Transit Ready-Mix, has announced plans for an expansion of both plant and personnel.

W. Gordon Wilson has been named production manager of National Sewer Pipe Limited, Toronto, Ont., Canada. He will supervise production at the concrete pipe plant at National Concrete Products, Ltd., Mimico. Mr. Wilson will also be responsible for production at the company's vitrified clay pipe plants at Clarkson, Hamilton, and Swansea, and the plain end pipe coupling plant.

PRASCHAK 50 CU. FT. MIXER

AMERICA'S POPULAR MIXER

(DRIVE GUARD REMOVED FOR PICTURE)

"The Mixer that Can Take It"

CAPACITIES:

8 cu. ft. . . . $ 680.00
16 cu. ft. . . . $ 900.00
21 cu. ft. . . . $1015.00
30 cu. ft. . . . $1430.00
50 cu. ft. . . . $2630.00

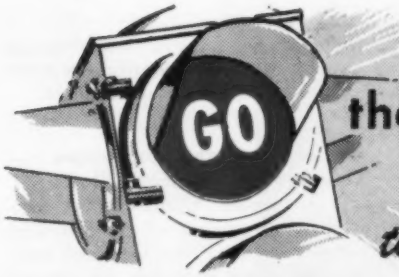
— PRICE LESS MOTOR —

Due to Rising Costs, Prices Subject to Increase Without Notice.

ALL SIZES AVAILABLE FROM STOCK, COMPLETE WITH MOTOR, MOTOR MOUNT, AND DRIVE.

Write for FREE BOOKLET on 1957 "THUNDERBOLT" Automatic Plain Pallet Block Machines. 2 & 3 Block Models.

PRASCHAK MACHINE CO. MARSHFIELD, WIS.



ELECTRONIC MARK X H_2O METER

the SURE WAY . . . to accurate determination of sand moisture

- CONTINUOUS DIRECT READING
- INDISPENSABLE FOR READY MIX INVALUABLE FOR BLOCK PRODUCERS
- SMALL COMPACT DESIGN
- SIMPLE INSTALLATION NO SKILL REQUIRED
- $178 DELIVERED ANYWHERE IN THE UNITED STATES

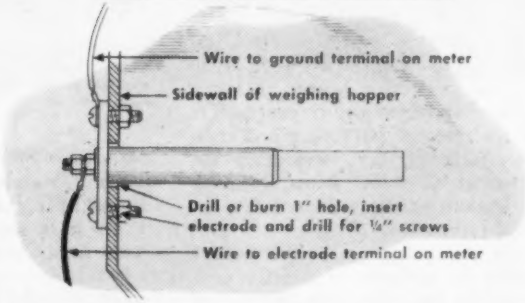
No more "road blocks" between the concrete producer and RELIABLE data on sand moisture content!

Employing the most advanced engineering ever offered in a moisture meter at any price, the Mark X H_2O Meter uses the field proven alternating current bridge in its measuring circuit.

Guaranteed accurate and maintenance free, the Mark X insures controlled uniform concrete — offers profit protection for the producer, and product satisfaction for the customer!

Install this useful tool and you're on the "open road" to production of controlled concrete and premium concrete products!

"THE STANDARD OF THE CONCRETE INDUSTRY"


Wire to ground terminal on meter
Sidewall of weighing hopper
Drill or burn 1" hole, insert electrode and drill for ¼" screws
Wire to electrode terminal on meter

Install electrode as above. Locate in position where it will be covered by sand when batching. Locate meter anyplace convenient to the batcher's hand and view. Plug cord into 110 volt outlet — the job is done.

All installation materials and detailed instructions included with shipment.

NATIONAL READY MIXED CONCRETE ASSOCIATION NRMCA

SARASOTA ENGINEERING COMPANY, INC.

designers *manufacturers* *consultants*

P.O. Box 1329, Sarasota, Florida • Cable address "Sarenco"

PURCHASE ORDER

TO: SARASOTA ENGINEERING CO., INC.
P.O. BOX 1329, SARASOTA, FLA.

COMPANY NAME _____

ADDRESS _____

BY _____ TITLE _____

FOR ONE MARK X H_2O METER
PRICE $178.00 DELIVERED
DELIVER AT ONCE BEST WAY
TERMS — 2% 10 DAYS; NET 30 DAYS

CALIBRATED FOR: ☐ SILICA SAND ☐ LIMESTONE SCREENINGS

DATE _____

NEW JET-BLAST PAN FORMS CREATE SMOOTH WAFFLE CEILINGS

The Ceco-Meyer Steeldome, a new metal pan for use in waffle-type concrete joist construction, is released from the hardened concrete by an unusual method—a jet-blast of compressed air. According to the manufacturer, the Ceco Steel Corporation, Chicago, Ill., inventor of the basic method in 1912, the Steeldome provides an economical and efficient way of forming waffllle-type concrete floors and roofs.

The usual method of releasing pan forms after the concrete has hardened is to pry them loose with crowbars. With Steeldome forms, one man presses an air gun against a fitting set into the form, while another man stands by to grasp the form as it is blasted free. This method protects the smooth concrete surfaces from chips and scratches, leaving an attractive ceiling or floor suitable for finished locations.

Designed especially for exposed ceiling construction, the Steeldome is a rigid, deep-drawn, one-piece unit that makes possible the construction of economical wide-open floor areas with no projecting beams. Flanges forming standard-width joist soffits are an integral part of the domes. When erected, the Steeldomes are butted at all soffits joints, creating the smooth surfaces desired for exposed ceilings.

The rigid, integral soffit flanges permit the economy of skeleton centering in one direction instead of two. If attached or suspended ceilings are required under waffle-type construction, ceiling hangers are easily installed through holes provided in the Steeldomes. Underfloor electrification is also easily accomplished.

Standard Steeldomes have a void of 30 in. by 30 in. and an overall plan size of 36 in. by 36 in., including flanges. Standard depths are 8 in., 10 in., 12 in., and 14 in.

Here a form is being blown free of a hardened concrete floor structure by air pressure applied to the fitting in the center of the form.

The basic economies of waffle-type construction are gained through two-way framing—the joists running two ways, at right angles to each other, instead of only one way, as in the more usual concrete joist floor and roof framing. This two-way framing allows wider spans, resulting in fewer columns and less total deadload.

Besser Company Announces Courses on Concrete Block

The Besser Company, Alpena, Mich., has announced the following schedule of its school for block makers and block users for the first six months of this year: March 11-16, general course; April 8-13, mechanical, materials, and methods; May 6-11, mechanical and electrical: June 10-15, mechanical, materials, and methods. The first general course was held from February 4 to 9.

Because of the high degree of interest and participation in the general courses offered last year, Besser is adding courses in more detailed study of mechanical, electrical, and/or materials and methods.

Reservations are on a first-come-first-served basis. Air transportation is furnished from and to Detroit.

George H. Redding Jr. has been elected president of the Massey Concrete Products Company, Chicago, Ill., to succeed his father, the late George H. Redding, who died last November. W. Lyle McDaniel was named executive vice-president.

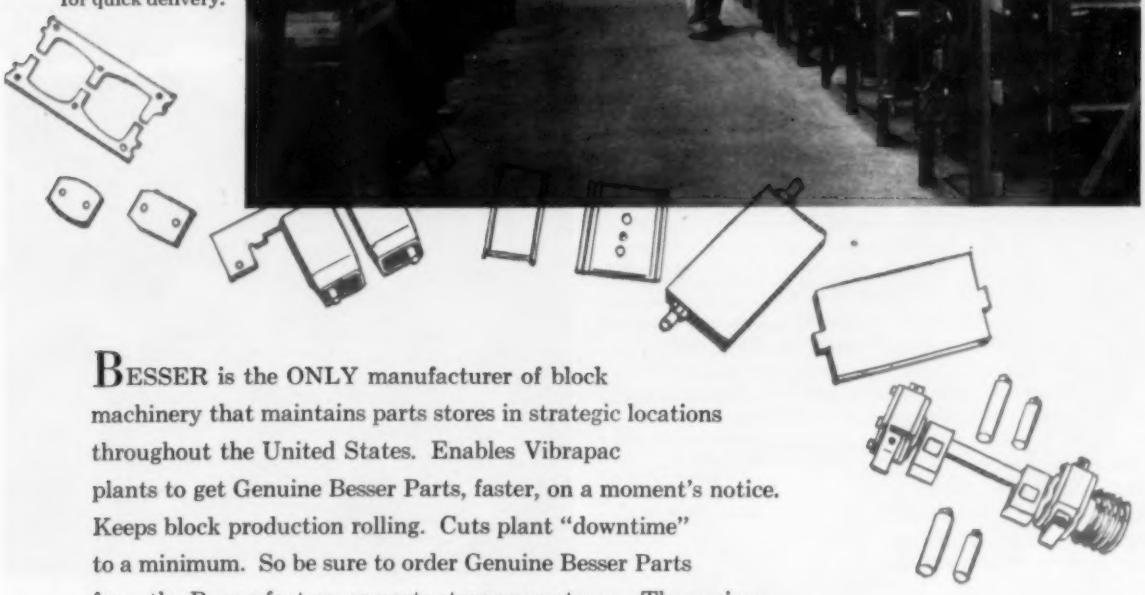
Spokane, Wash., will be the host city for the annual spring meeting of the Concrete Products Association of Washington on March 29 and 30. Separate sessions to be held by concrete block and pipe manufacturers will feature speakers on technical problems and business administration.

Forms being fitted in place during the construction of a shopping center in Paramus, N. J. They are nailed to the wood planks through holes provided in each corner of the flange to hold them firmly during pouring.

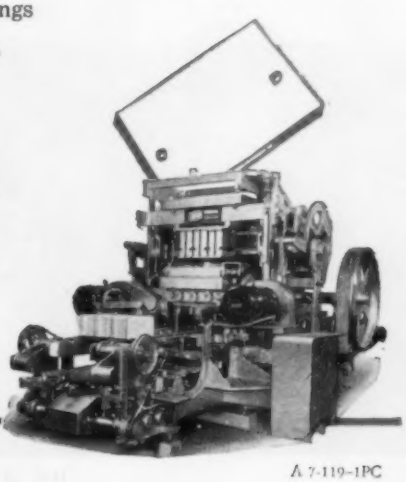
An overall view of the construction of a floor shows workmen laying down new forms, which provide a firm walking surface for the erectors during placement of the reinforcing steel bars.

Genuine
BESSER
Parts
PRONTO!

Typical Besser Parts Store showing stocks of cores, stripper shoes, division plates and other Genuine Besser Parts . . . available for quick delivery.



BESSER is the ONLY manufacturer of block machinery that maintains parts stores in strategic locations throughout the United States. Enables Vibrapac plants to get Genuine Besser Parts, faster, on a moment's notice. Keeps block production rolling. Cuts plant "downtime" to a minimum. So be sure to order Genuine Besser Parts from the Besser factory or parts store nearest you. The savings in dollars on a single day's production will pay for the parts.



BESSER Company
BOX 131, ALPENA, MICHIGAN, U. S. A.
Complete Equipment for Concrete Block Plants

BESSER PARTS STORES

ATLANTA
901 Sycamore
Decatur, Georgia
Phone:
DRake 3-5781

BUFFALO
116 Michigan Avenue
Buffalo, New York
Phone:
MOhawk 3990 & 6019

ALPENA
Besser Factory Store
Alpena, Michigan
Phone: 291

LOS ANGELES
6100 Sepulveda Blvd.
Van Nuys, California
Phone:
STate 5-5457

NEWARK
140 Delancy Street
Newark, New Jersey
Phone:
Mitchell 2-1434

BESSER Genuine PARTS

A 7-119-1PC

New Dutch Durox Gas Concrete

By ARTHUR R. PASTORE JR.
Paris, France

Another PCQ Exclusive

A NEW Dutch industry located at Libo, Netherlands, a plant of the Netherlands - Belgishe Maatschappij voor Lichte Bouwproducten, will open within a few months to produce a new type of Swedish Durox concrete, under license from the Swedish manufacturers.

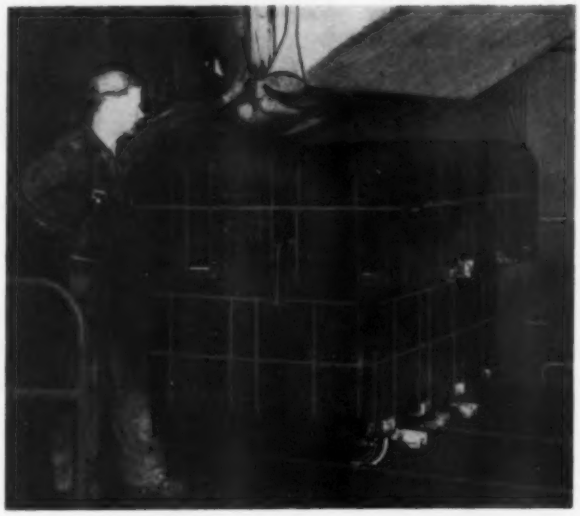
Durox concrete material is said to be much lighter than regular concrete. It is a homogeneous lightweight material of unusually high strength. The standard weights vary, according to grade, from 25 to 44 lb. per cu. ft. Due to its uniform cellular structure, Durox has a high water resistance, since each of the spherical cells functions as a water barrier. According to recent tests made in Sweden, this concrete has a water absorption of only one-fourth that of ordinary brick. It is also frost resistant and has negligible shrinkage properties, making the concrete good insulation against cold and heat. According to tests, a 10-in. wall of Durox, weighing 57 lb. per cu. ft., offers the same insulating protection as a brick wall three times as thick or a dense concrete wall even eight times as thick.

The Libo plant will manufacture wall and roof elements, as well as blocks and slabs of the steam-cured cellular gas concrete material, which is suitable for construction work. The roof and floor slabs are now widely used for both residential and industrial construction. The lintels are reinforced with a basic core of prestressed concrete and have been tested for a load of 1,200 lb. per lineal ft., equally distributed. Due to their light weight, the lintels can be easily handled by two workers, saving construction costs in time and money.

The Dutch plant will also be producing reinforced building elements used for the construction of residential housing, garages, warehouses, factories, and other installations. The elements are turned out in the form of easy-to-handle story-high wall slab units, which have a modular width of 20 in. and a thickness of 3 to 12 in. These elements can also be used as insulation on regular concrete or brick walls, and can be veneered to look like ordinary building blocks.

Slabs for partition walls are to be produced in standard dimensions of 10 by 20 in., with a thickness of 2 to 6 in. Insulating slabs are of the same proportions, but these have a weight of 25 to 31 lb. per cu. ft. Designed to insulate reinforced concrete walls, the slabs can be installed as a backing form when the concrete is being poured. These units can be used as insulation on brick walls, as concrete beams, in basement walls, and as other wall material.

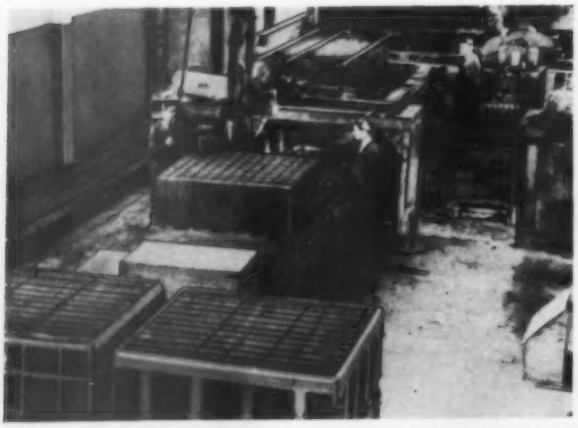
Durox gas concrete is manufactured of lime and cement in combi-

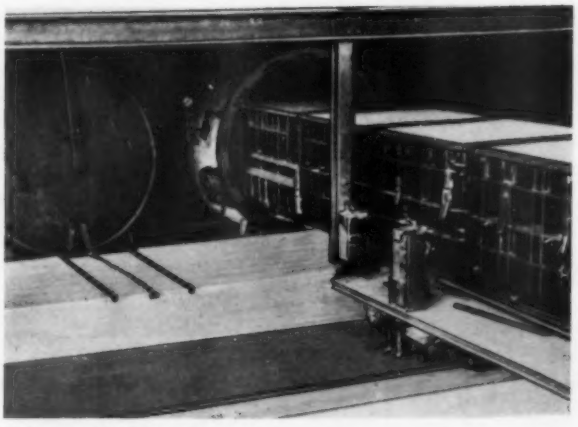


Slurry is mixed, then poured into steel molds, to permit rising and stiffening of the mixture.

After rising, the semi-hard mass is sawn to desired block dimensions in a special cutting machine.

To finish the chemical reaction of the ingredients and get a hard product, it is cured under high-pressure steam for about 15 hours.





MORE PAYLOAD • BETTER WEIGHT DISTRIBUTION

ELIMINATE MIXER ENGINE • CUT OPERATING COSTS

with CHALLENGE "ETO"* Pacemaker

. . . EASILY MOUNTED ON THE TRUCK OF *YOUR* CHOICE

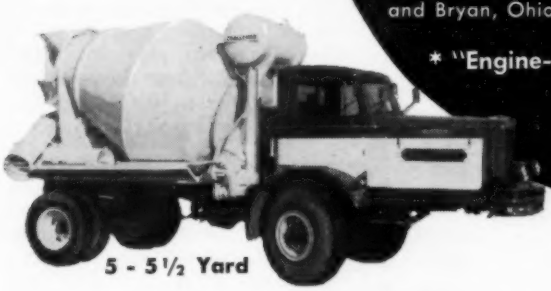
6½ - 7 Yard

5½ - 6 Yard

Not only do you haul more payload and cut your operating cost to the bone, but with the Challenge "ETO" Pacemaker you get the complete unit from ONE SOURCE. You don't have to chase around for additional parts, or specify special accessories from the truck manufacturer.

The Challenge "ETO" Pacemaker, including mixer and engine-take-off drive assembly is ready to install on most standard trucks without costly alterations to chassis or cab. Installation, on the truck of your choice, can be made by your own shop crew . . . your authorized Challenge Distributor . . . or the Challenge Factories in Los Angeles, California and Bryan, Ohio.

* "Engine-Take-Off"



5 - 5½ Yard

6 - 6½ Yard

COOK BROS. EQUIPMENT CO.

Exclusive Distributors for Challenge Pacemaker Truck Mixers
World-Wide Standard For Quality • Performance • Economy

3334 San Fernando Road, Los Angeles 65, California • Telephone: CLinton 6-3151

THE **ONLY** TRUCK ENGINE DRIVEN MIXER
PROVED BY MORE THAN 6 YEARS OF FIELD SERVICE

nation with certain siliceous ingredients such as fly ash, sand, alum shale ash, blast furnace slag, or natural pozzolans. The ingredients are pulverized, and later combined in proper proportions and thoroughly mixed with water. To this mixture is added a very fine aluminum powder which serves as the activating agent. At this point, a chemical reaction takes place, and the mixture rises until it gains the desired volume.

After it has hardened to set to the proper degree, it is automatically sent off to the cutting station, to be cut into various dimensions by a simple and effective cutting machine which utilizes steel wire as the cutting blade. Then the blocks, still cast in the original mould, are then transferred to the autoclaves *via* an automatic rail conveyor belt system, to be steam-cured for a certain period at a temperature of 355 deg. F. After this operation in the manufacturing process, the Durox cement blocks or slabs can be shipped to the building construction site without further drying or curing. They are then ready for delivery to the buyer.

One of the marked advantages of the new concrete material is its workability for construction work. Durox gas concrete can be easily sawn, nailed, bored, or hewn with ordinary carpenters' tools. It can be worked like wood products. Also, since it is composed of inorganic siliceous material, it is practically incombustible and is considered fire resistant for all practical purposes. Because of its inorganic and chemically inert qualities, the gas concrete mixture is not subject to rot and normal decay, and it cannot be affected by termites, fungi, and other pests.

When the new Dutch Libo plant is producing Durox concrete full capacity, the parent firm whose main plant is located in Skovde, will turn out more than 130,000 cu. yd. annually. In addition, the concrete process under license is being turned out in new plants in Denmark, France, and Rumania and in the Netherlands, which have a total production in excess of 200,000 cu. yd. annually.

The first plant licensed to make Durox concrete units in this country has just been completed in Denver, Colo., by the United States Durox Corporation, and it is expected that other such licenses will shortly follow.

Cinder Block & Material Co. Announces Two Promotions

Charles E. Boswell has been appointed secretary of the Cinder Block and Material Company, Indianapolis, Ind. Mr. Boswell, formerly office manager, has been with the company since 1937.

Stewart D. Tompkins was named executive vice-president of Cinder Block. He joined the firm in 1950, became sales manager in 1953, and was assistant general manager until his recent promotion.

A.C.I. Issues Special Reprint Of Guide for Strength Design

The American Concrete Institute has reprinted in special covers the report *Guide for Ultimate Strength Design of Reinforced Concrete* by Charles S. Whitney and Edward Cohen. The 36-page report, which includes 15 design charts, first appeared in the November, 1956, A.C.I. Journal.

This paper is intended as a supplement to the A.C.I. *Building Code* (A.C.I. 318-56), which permits the use of the ultimate strength method for the design of reinforced concrete members. It presents the method in its simplest form with working equations and charts to aid in their application. It aims to give the designing engineer all the information that he needs for the use of the ultimate strength method in accordance with the recommendaitons of the report of the A.C.I.-A.S.C.E. joint committee on ultimate strength design.

Regarding those problems not covered by the Code, such as consideration of shear, bond, and deflections, recommendations are made based on the writers' practice.

Price, 75 cents per copy. This paper is available from the American Concrete Institute, 18263 West McNichols Road, Detroit 19, Mich.

Cavitex building block is being manufactured at the recently-completed plant of the Edan Cement Products Company near Mantua, Ohio. Cavitex, a long brick-like building block, has a smooth finish and is supplied in several colors. Andy Kulesh is president of the firm, Edward Kristenak is vice-president, and Mrs. Gael Jinks is secretary and treasurer.

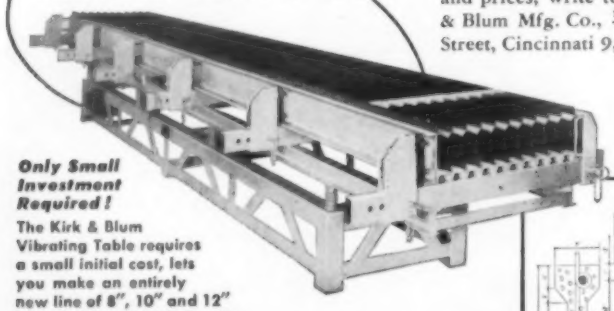
The Concrete Reinforcing Steel Institute has announced the publication of its 1957 *C.R.S.I. Handbook*, which provides finished designs of reinforced concrete members.

Add a New Profit-Maker

increase your volume

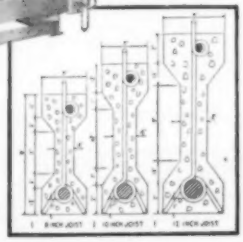
PRODUCE CONCRETE JOISTS, LINTELS AND FENCE POSTS with the KIRK & BLUM HEAVY DUTY VIBRATING TABLE

Your experience in the building trade should make it easy to build up a profitable business in this new line. The products are simple to make, have unusual strength, are termite proof. The KIRK & BLUM Type "S" Heavy Duty Vibrating Table is capable of multi-production of concrete joists, allowing a fine profit-margin. Easily produced by unskilled operators. For complete details and prices, write to The Kirk & Blum Mfg. Co., 3112 Forrer Street, Cincinnati 9, Ohio.



Only Small Investment Required!

The Kirk & Blum Vibrating Table requires a small initial cost, lets you make an entirely new line of 8", 10" and 12" joists in 20 and 24 ft. lengths.



KIRK & BLUM

Manufacturers of steel forms of all types . . . Curb, Gutter, Sewer, Road

EXTRA SALES for you in Houses with Basements

Home owners want basements. Tastes differ by regions but for the nation as a whole there is an overwhelming preference for basements.

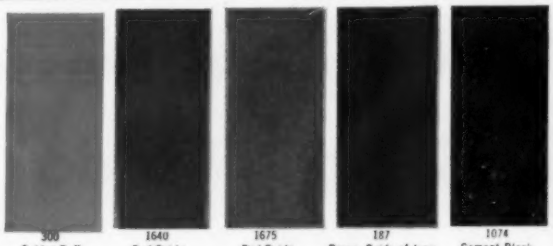
Latest surveys conducted by national magazines show this demand. Here is the proportion of those surveyed by each magazine who want basements:

American Home	**67.0%**
Better Homes and Gardens	**65.0%**
Colliers	**73.0%**
Curtis Publishing Co.	**76.9%**
Living	**68.3%**
McCall's	**72.8%**
Parents	**76.3%**
Small Homes Guide	**65.2%**

Such popularity is easily understood. A basement provides the most economical space for storage, heating plant, playroom, workshop, darkroom or laundry. Putting these facilities in the basement leaves more lot space for lawn, flowers and outdoor living.

Inasmuch as there exists such a strong demand by prospective home owners for basements, they constitute a good source of additional sales. In many designs more block are used in the basement walls and partitions than in the rest of the house. That's why many leading concrete masonry manufacturers find it pays to promote basements—with concrete masonry foundations and partitions—among architects, builders and lending agencies.

PORTLAND CEMENT ASSOCIATION
33 West Grand Avenue, Chicago 10, Illinois
A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work



A guide for choosing concrete colors

For producers of split blocks, patio blocks, concrete blocks and other colored concrete products.

Manufacturers of colored concrete products agree . . . *The pigments they use must have these 3 important qualities:*

1. A high degree of tinting strength when added to the mix
2. Color uniformity year in, year out
3. The ability to incorporate easily

Manufacturers also require a pigments supplier whose technical department is capable and cooperative, whose shipping service is prompt and dependable.

Point for point, REICHARD-COULSTON quality-controlled pigments and dependable service meet *all* these requirements!

The shades shown above are just 5 of the many concrete colors manufactured by REICHARD-COULSTON. Included are yellows, buffs, maroons, grays, reds.

For a free color card, fill in and mail the coupon. Act now.

GENERAL RECOMMENDATIONS: PASTELS (*Split blocks and similar products*), 2-4 lbs. for each bag of cement. DEEP SHADES (*Patio blocks, concrete blocks, etc.*), 6-8 lbs. for each bag of cement.

Reichard-Coulston, Inc.

15 EAST 26th STREET, NEW YORK 10, N. Y.

Warehouses in principal cities; factory: Bethlehem, Pa.
Over a century of manufacturing and service

Natural IRON OXIDE PIGMENTS *Synthetic*

REICHARD-COULSTON, Inc. CM-37
15 East 26h St., N. Y. C. 10

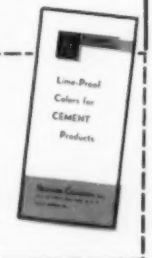
Gentlemen: Please send me a free card of REICHARD-COULSTON concrete colors.

My name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____



Testing Prestressed Concrete In South Florida*

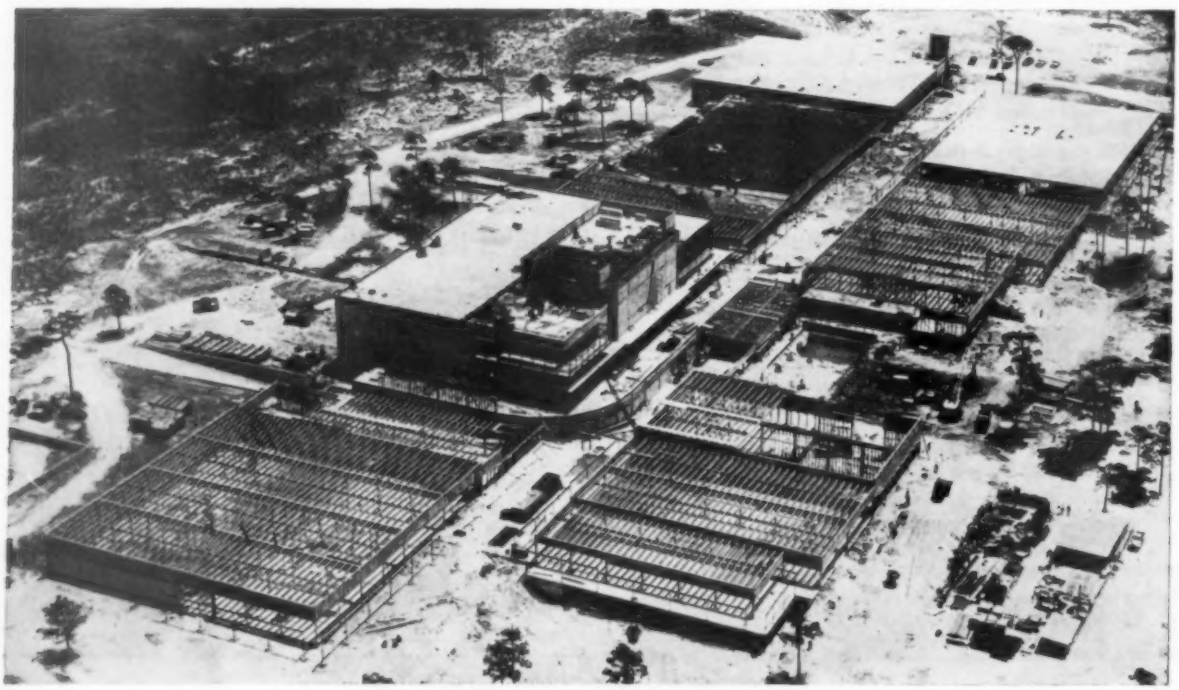
By J. W. HARLLEE
Pittsburgh Testing Laboratory

ONE of the most amazing success stories in the construction industry is the fast growing use of prestressed concrete for industrial, commercial, residential, and bridge construction. The acceptance of a new design is generally not universal unless there is the urgent need of it for practical or economic reasons. Thus, in prestressing, Europe and South America have made the greatest strides, spurred on by scarcity, the excessive cost of structural steel, and the abundance and cheapness of labor.

In the United States, the initial development was in the Northeast, during a critical material shortage; but the greater development is now in the South and West, where the use of structural concrete is more universal. In Florida the impact of prestressed concrete has been felt more strongly, perhaps, than in any other sections of the country. Coupled with the demands of a booming building industry are those of the Florida State Road Department and the Florida Turnpike Authority. The steel shortage has caused the simplest of structural shapes, with light fabrication or no fabrication at all, to be quoted at 12 to 18 months' delivery time.

This factor, the large concentration of prestressed concrete producers in Florida, and the decision of the Florida State Road Department to standardize the design of prestressed beams for bridge construction, have combined to boost prestressed concrete into the spotlight of Florida's construction industry.

The Miami office of Pittsburgh Testing Laboratory has a more personal interest in prestressed concrete in South Florida than does an amazed bystander. The services which are offered by this office fill a vital need in this field, as is often the case in many other facets of the industry. As the technique progresses, it is found to be increasingly impor-

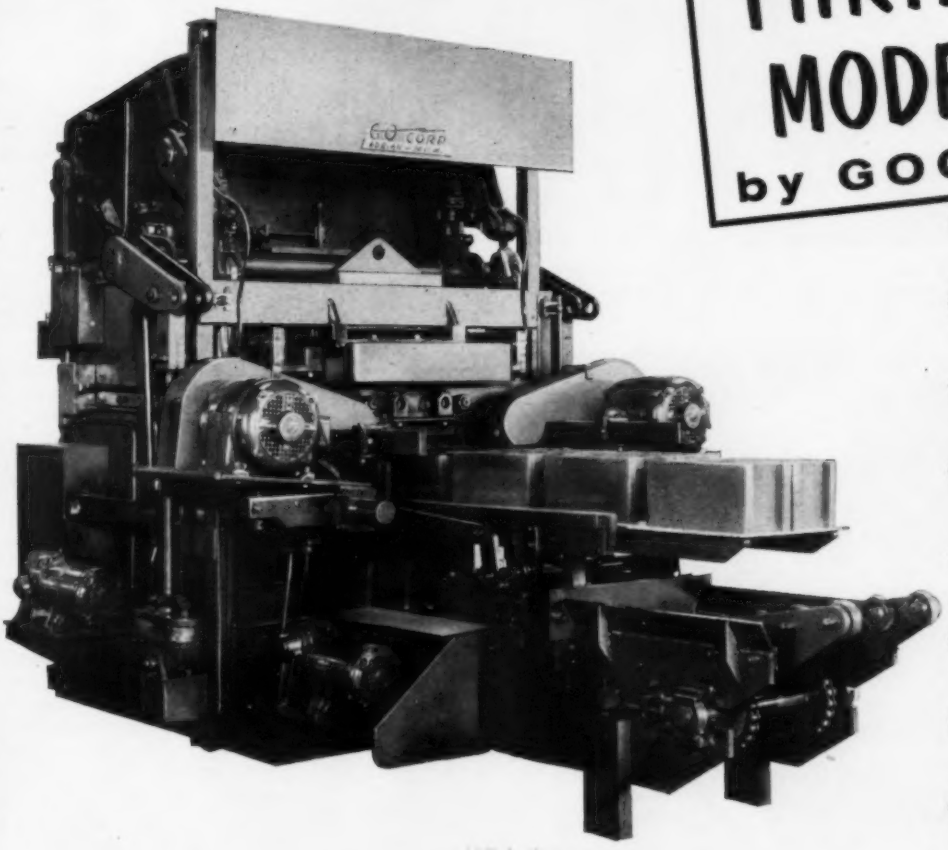


An air view of the 4-square block 163rd St. shopping center, Miami, Fla., in which over 36,000 ft. (lineal) of prestressed concrete I-joists were used.

*This article appeared in the September, 1956 issue of *PTL News*.

TRUSTEE

THRIFTY MODELS by GOCORP



2X and 2½X HYDRAULIC BLOCK MACHINES

(formerly GOCORP "JETS")

• **SPEED**—Conservatively rated at 600 good blocks per hour.

• **QUALITY BLOCKS**—Quick change feed and strip time controls to handle troublesome mixes • Automatic, low voltage height control • A block receiver that babies your blocks.

• **HYDRAULIC DRIVE**—For swift, smooth, effortless motions.

• **RUGGED**—Full 1" side plates—thoroughly cross braced • Motors, pumps, shafts, single acting cylinders are all oversized for real staying power • Plug stop reversing vibrator motors—no brake failures. Maintenance costs reduced to the minimum.

• **ACCESSIBLE—NO PIT REQUIRED**—Working parts are where you can get at them • Change full height molds in about 20 minutes—to other heights in about 30.

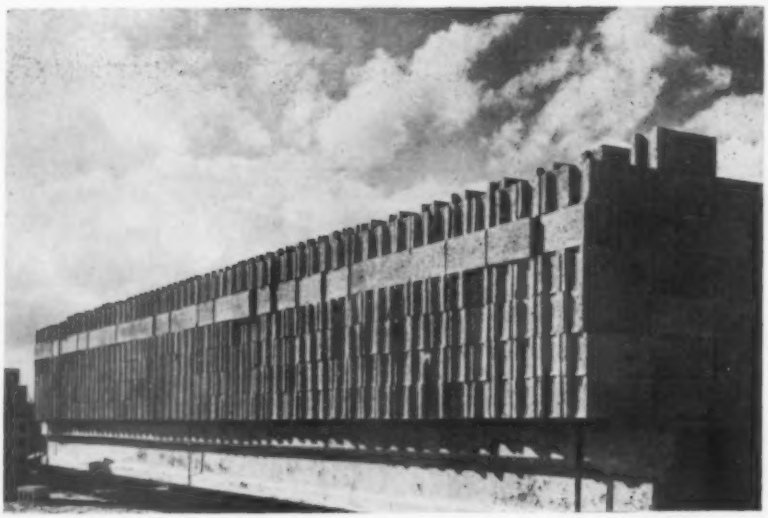
FOR HIGHER PRODUCTION AT A LOWER UNIT COST, WRITE TODAY FOR YOUR BROCHURE ON THE FOUR TRUSTEE MODELS.

OTHER GOCORP PRODUCTS

BLOCK MACHINES: "Super" and "Special" Trustees (3X models), "Senior" and "King" (Plain Pallet); "Junior" and "Junior Twin" (cored pallet) • **RACKMAN**—the first proven automatic rack loading device • Mixers and Skip Loaders • Cubers and Offbearers • Allied Equipment.

GO CORP
ADRIAN-MICH.

464 Bruce St. Adrian, Michigan PHONE: COlfax 5-7165 • CABLE "GOCORP"



Testing load on a pair of the 24-in. I-beams for the Miami shopping center. Load of 2 L.L. plus ½ D.L., or 235 lb. per sq. ft. resulted in a deflection of only 1.85 in., with no cracks showing.

Fort Lauderdale, Fla., postoffice building, almost an entirely prestressed structure of columns, beams, and double-T roof slabs.

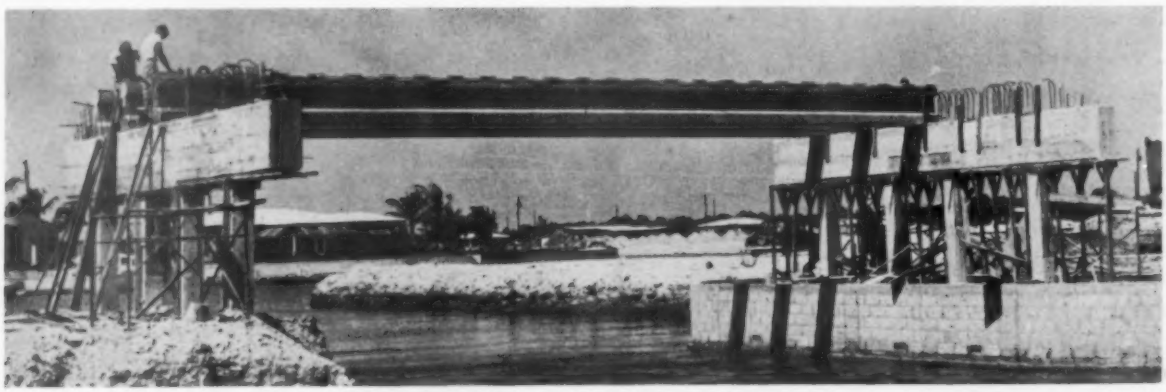
Below: Installation of the 64-ft. span prestressed concrete I-beams in the Keystone Point bridge, which enabled the contractor to complete the structure 30 days after driving the first piling.

tant that testing of the concrete to be used in prestressing the structural member is one of the most important functions in the creation of this material.

Prestressed construction has been used in Florida state road work only on a basis of contract cost in competition with one of the conventional types. To date, in every case, the prestressed alternate has won the competition on every job on which it was allowed. The road department's experience has been so consistent that the policy of designing alternate types is being abandoned for projects on which prestressed concrete members are applicable. All of the bridge contracts (allowing alternates) for the Sunshine State Parkway, which have been awarded by the Florida Turnpike Authority, have gone to contractors who submitted prestressed concrete alternates.

The Florida building construction industry has also used a tremendous volume of standard prestressed concrete members, including roof and floor slabs, joists, beams, channels, columns, and piling. Clear spans in excess of 60 ft. are possible with standard prestressed units, which reduces supporting column requirements and affords full use of floor space. The basic properties of great strength, light weight, design flexibility, speed and economy of installation, and low maintenance, make these members especially adaptable to office and residential buildings, schools, churches, warehouses, and bridges.

In South Florida a number of prestressed concrete producers have in the last few years produced a major share of the prestressed units used in all types of buildings and other structures. Included in this list are four companies which have seemed to take the lead in promoting this type of member. These are: R. H. Wright



BIG PROFITS FOR READY-MIX OPERATORS

WITH RCA TWO-WAY RADIO

Why are the leaders choosing RCA 2-Way Radio?

Most of them say they are impressed by RCA's fine service organization and the years of RCA leadership in radio and electronics. Look for these marks of quality: Superior crystals, tubes and microphones for plainer talking, longer life . . . heavy-gauge steel case for rugged service . . . color-coded tuning for simplest maintenance . . . expert service by RCA Service Company to assure peak performance.

You are always in touch with your drivers when agitator trucks and supervisors' cars are equipped with RCA 2-Way Radio. As a result . . .

- Trucks can be re-routed in emergencies, avoiding delays and losses, increasing profits.
- Plants can close earlier and users report savings in overtime up to 20-30% per month by knowing in advance when the last truck will be in.
- Trucking productivity is vastly improved . . . 10 trucks radio-equipped have been found equal to 11 trucks (or more).
- Telephone expense is reduced —you save money on every call you don't have to make.
- Faster service you can render makes a hit with your customers . . . it's a money-maker for them . . . business-getter for you.

DISPATCHER 2-WAY RADIO TO DRIVER

Get the whole story—Mail Coupon

RADIO CORPORATION of AMERICA

COMMUNICATIONS EQUIPMENT

CAMDEN, N. J.

Radio Corporation of America, Communications Equipment

Dept. P-290 Building 15-1, Camden, N.J. In Canada, RCA VICTOR Company Limited, Montreal.

☐ Please send me complete information on the use of 2-Way Radio in Ready-Mix Operations.

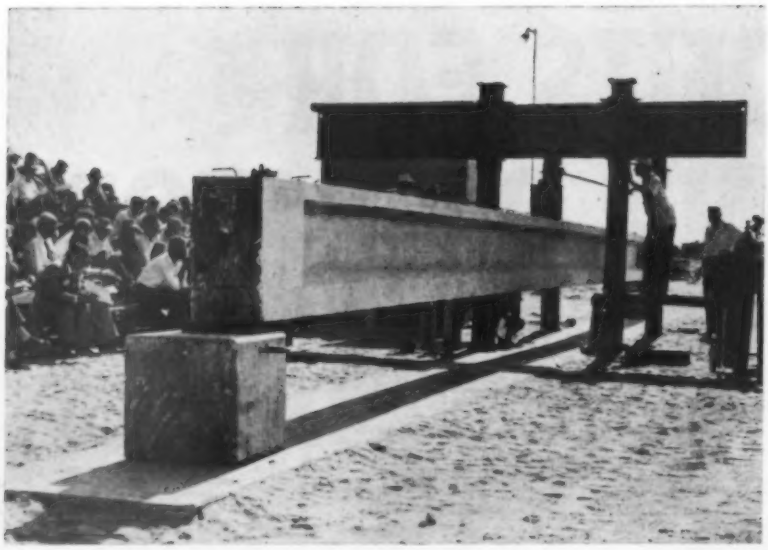
☐ Have an RCA Communications Specialist make a free RADIO SURVEY of my business.

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____



Concentrated load test on a prestressed I-beam at a P.C.I. convention demonstration in Florida.

& Son, Inc., with plants at Deerfield Beach and Dania; Lewis Manufacturing Company, Inc., of Miami; Juno Prestressers, Inc., of Juno Beach; and Crissey-Schilling of Miami. Other companies in the area are becoming increasingly active in building new prestressing beds for lineal production of slabs, or universal-type beds for making columns or piling.

Projects of interest of the abovementioned prestressed concrete producers include: the 163rd St. Shopping Center in North Dade County, where over 36,000 lineal feet of Wright's prestressed concrete I-joists, averaging 40 ft. in length, were used in floors and roofs; the Keystone Point bridge, where 64-ft. span prestressed concrete I-beams, furnished by Lewis Company, enabled the contractor to complete the bridge 30 days after driving the first piling; the Fort Lauderdale postoffice, consisting of Wright's prestressed concrete columns, beams, and double-T roof slabs, making this building an almost entirely prestressed structure.

In the Stuart Elementary School, Wright's T-joists, with lightweight roof decking are being used. Prestressed concrete piling, up to 85-ft. lengths, is being manufactured by Juno Prestressers, Inc. Our own P.T.L. office and laboratory building in Miami, has a roof made of 30-ft. clear span prestressed concrete double-T units.

Two major methods are followed in producing prestressed concrete—pre-tensioning and post-tensioning. The first of these methods is usually adopted in production plants located in outlying areas which afford the large acreage necessary for the construction of the long prestressing beds. In these, long lines of 7-wire, stressed-relieved steel strands, averaging over 275,000 p.s.i. in strength, are stressed up to 70 percent of their ultimate strength by means of tensioning equipment and stress-sustaining buttresses. The concrete, usually of about 4,500 p.s.i. strength at the end of 16 hours, is then cast around the strands, and the bond between the concrete and steel is depended upon to develop the compressive strength in the concrete at the time the tension in the strands is released.

Pre-tensioning is the system almost exclusively used in southern Florida because it lends itself to high production methods of stressing strands on a long casting bed and to casting many units along this bed in one stressing operation.

Post-tensioning consists of stressing the reinforcement after the concrete has hardened, by pulling on the ends of the strands, which pass through tubes cast in the concrete, and depending upon end fasteners to develop the stress in the tensioned strands. The compression stress is held in the concrete by these fasteners bearing against steel plates set in the ends of the concrete member. Usually the strands are imbedded in cement grout for protection against corrosion and, in some cases, to increase the bonding action in composite beams. Post-tensioning is usually adopted in long, heavy members, such as bridge girders, etc., which are difficult to move from the casting plant over roads to the job site, and are therefore usually manufactured at or near the site.

Prestressing is, in fact, pre-testing, in that one of the important features of prestressed concrete design is that the initial stresses, induced at the time of prestressing, are never again exceeded, except under extra-heavy over-loads. Prestressed concrete units are designed to push against the load, as opposed to a conventional beam, which gives with the load. Due to the nature of the design, and the high strength of the materials (5,000 p.s.i. concrete and 275,000 p.s.i. steel), it is possible to produce long, shallow beam sections of great strength, and other sections having

Uniform load test on two of the prestressed I-beams for the new Miami television station.

New FWD-only sure way to guarantee delivery anywhere!

Every Ready-Mix fleet needs one or more FWDs. It's the only way to guarantee get-there service on the tough hauls! These rugged Ready-Mix specialists carry maximum loads through mud, sand or uneven terrain of construction-sites and spot the load right where you want it.

These aren't ordinary trucks. They have the unmatched power and traction that made FWD famous! This is full time 6-wheel drive with both power and weight proportioned between 3 live axles. For city deliveries they are snappy in traffic, easily maneuverable with power at every wheel. Haul bigger payloads and guarantee your deliveries with new FWDs built especially for the Ready-Mix market. Write for the facts today!

Heavy-Duty Vehicle Specialists

THE FOUR WHEEL DRIVE AUTO COMPANY • CLINTONVILLE, WISCONSIN • Canadian Factory: KITCHENER, ONTARIO

The tension in the strands has been released by hydraulic jack and a workman is severing the strands with an acetylene torch, between sections of prestressed concrete piling.

many highly desirable qualities, in prestressed concrete, which cannot be duplicated in conventional mild steel-reinforced concrete.

Quality of the materials used in prestressed concrete is especially important, and because of this fact the commercial testing laboratory is often called upon to design concrete mixes and make control tests on concrete test cylinders. These cylinders are taken from some plants to meet job-specified requirements, and from others for manufacturer's quality control, or for stripping time requirements of units from forms. Tensile tests of reinforcing strands are made both for control and acceptance. Calibration of tensioning equipment, or stress-checking equipment, is also very important. These calibrations can often be made in the laboratory, if the testing equipment is portable, such as small, lightweight tensile or compression hydraulic jacks, or snap-on strand type dynamometers.

To calibrate large, 200- or 300-ton capacity hydraulic systems, permanently installed at the prestressing plant, it is necessary to use portable calibration equipment, such as proving rings, or SR-4 strain gauges. From past experience, it has been learned that the use of proving rings is both difficult and dangerous. It is recommended that a load cell, made up for use with SR-4 strain gauge equipment, be used for field calibrations of heavy, high-capacity stressing equipment. This method is becoming increasingly common in the offices of the Pittsburgh Testing Laboratory, which recently made and calibrated such a device. The inspection of stressing and casting operations is another possible service afforded by this firm in prestressing.

Load testing of finished members, another service quite commonly performed, may be in the form of experimental tests on new designs and methods for the manufacturer, proof or performance tests called for by the purchaser or his engineer, or basis-of-approval tests required by various municipal and governmental agencies.

Producers of prestressed concrete in southern Florida have played a major part in forming what is now a nationwide organization, the Prestressed Concrete Institute. This association is composed of manufacturers of prestressed concrete and/or persons and companies in allied or related industries, for the mutual exchange of information and ideas on prestressed concrete. To date, the institute has held three annual meetings, at each of which the attendance has greatly increased. It has also jointly sponsored a prestressed concrete short course with the University of Florida at St. Petersburg, and will jointly sponsor with the University of California, and various technical societies, the World Conference on Prestressed Concrete, to be held at San Francisco, Calif., on July 29 to August 2, 1957. It is expected, in view of the rapid progress which the techniques of prestressing have made since the inception of the industry in this country in 1950, that the San Francisco meeting will be a high point in the dissemination of information on the subject.

The 275-mile extension of the Florida turnpike to a point near the Georgia state line above Jacksonville, Fla., expected to be in construction shortly, will make this the longest toll turnpike within one state in this country. This extension will presumably continue the use of prestressed concrete in the light of the favorable experience on the southern Florida portion of the highway crossings. In the longer hauls necessary to supply prestressed concrete members to the northern portion of the turnpike, southern Florida prestressers may be at somewhat of a disadvantage in hauling costs, although this may be offset by the economies of mass production techniques.

Of the 86 bridges built on the turnpike from Miami to Fort Pierce, 28 are of prestressed concrete construction. This is one of the factors that has contributed largely to lower construction costs, figured at $470,000 per mile, compared with other turnpikes that have cost a little above this figure to millions of dollars per mile. Overall savings on the turnpike have been about $16,000,000, with $12,000,000 saved on contractors' bide alone. The aggregate cost of the 110 miles will be $58,000,000, against a pre-construction estimate of $74,-000,000. R. H. Wright Company's plants have manufactured the prestressed members for all turnpike bridge contractors except for Cleary Brothers Construction Company, West Palm Beach, which has its own fabricating yard. In this work, Wright will have supplied about 36,000 lineal ft. of prestressed concrete bridge beams and 300,000 lineal ft. of prestressed piling.

In testing work in connection with most of the prestressed concrete production, many firms have their own laboratory at their batching plants. This is the case with the Wright Company at its main batching plant in Fort Lauderdale. The company does not rely wholly on its own findings in these tests, but double checks with the P.T.L. to insure against any failures and to detect any possible flaws in its own work. It is considered especially important in the early stages of any new design or method, adequately to insure that the materials which are used meet standard requirements. While it is true that approved testing methods will go far toward this goal, they cannot be the cure-all for indifferent application or installation of the member in a contemplated structure. It is also important that the overall design of such a structure be entrusted to capable hands, and in this respect the industry has been fortunate in having many engineers and architects who appreciate the proper use of the new techniques.

REX® ADJUSTA-WATE MOTO-MIXERS

Why the *leader* tops them all on speed and carrying capacity

Fastest complete trip cycle. Adjusta-Wate Moto-Mixers® combine charging, mixing and discharging to give you the fastest *over-all speed.* There's no sacrifice of mixing and discharging speed to achieve a few seconds' superiority in charging as on some mixers. Adjusta-Wate saves time on every trip. You'll be able to make more trips each day —more profits!

And you get much more. Rex has a specially designed, low-inclined drum that insures quality concrete every time...greater customer satisfaction. Because of its rear-mounted engine, the Adjusta-Wate mounts on a shorter wheel base truck, giving you much better maneuverability in tight quarters. And look at the spouting range of that mixer! Discharge point is well back of the rear tires so there's no truck interference.

Only Rex gives you so many profitable features. And only Rex gives you famous quality construction that means longer, more profitable service with less time out for maintenance. See your Rex Distributor or write CHAIN Belt Company, 4782 W. Greenfield Ave., Milwaukee 1, Wis.

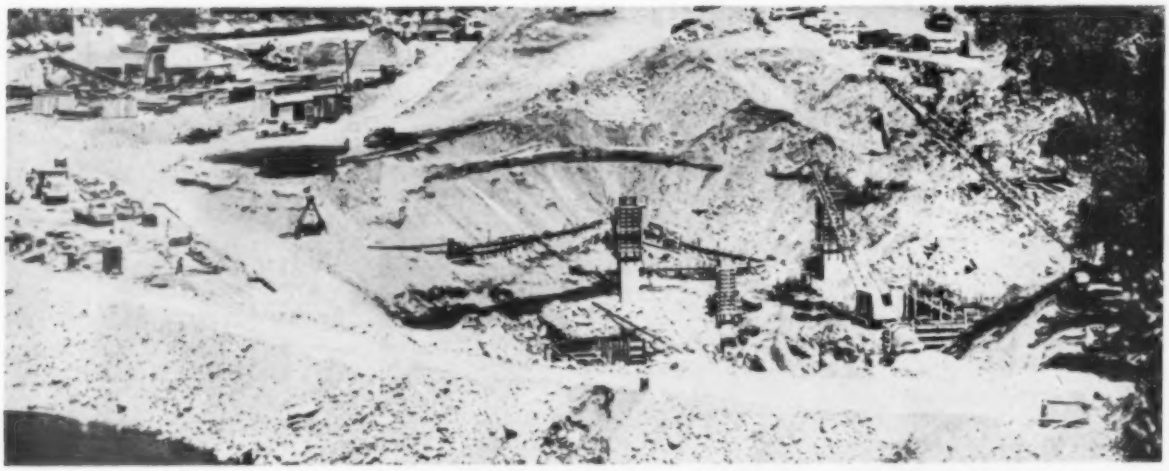
CHAIN BELT REX COMPANY

DON'T PENALIZE YOUR PROFITS...your local REX distributor can give you the facts on

ADJUSTA-WATE MOTO-MIXERS®

LEADERSHIP...THROUGH CREATIVE ENGINEERING

CHAIN BELT COMPANY



The riverside construction site of a new powerhouse in California entailed flood danger to the Bechtel Corporation's operation.

Danger Due to Flash Floods Averted, Cost Cut 70% By Use of Portable Plant

Flash floods that could wash away a fixed batching plant installation were a threat at the site of the project, the river will be returned to Bechtel Corporation's operation during the construction of a powerhouse for the Pacific Gas & Electric Company on the Feather River, Calif. A gravel bar at the river edge was the logical site for a concrete batching plant because it was the only place with sufficient area for aggregate storage. Yet, because of the flood danger, the only practical alternative site was a point 110 ft. up the canyon wall off the Western Pacific Railroad right-of-way. A stationary plant there would have required extensive concrete foundations and a major earthmoving job to level an area of sufficient size to store aggregates. The site also would have entailed transit truck hauls down a steep grade under all weather conditions.

With this movable batching plant, advantage could be taken of the best operating area, since the unit could be hauled to high ground when floods threatened.

Noble-Mobile made the mountainside installation unnecessary. This batching plant on wheels was put into operation at the river edge, as it could be hauled out to high ground on only a day's notice of flood. The mobility permitted scheduling work for 12 months a year, so that the job could be completed by 1958. Noble-Mobile saved 70 percent in installation costs as against a stationary, mountainside plant.

On this project the batching plant normally has to operate only 50 percent of the working day in order to provide the 25,000 cu. yd. of concrete that ultimately will be used. The batch is hauled by transit trucks to the construction site only 300 yd. distant. 1,000 cu. yd. of 2½-, 1½-, and ¾-in. aggregates and sand, hauled by truck from Oroville 25.1 miles away, are stored in compartmented piles at the site. They are fed by a scooploader to a conveyor leading to the plant. The materials are automatically batched and discharged by a conveyor to the transit trucks for the approximate 2-minute haul to the pouring site.

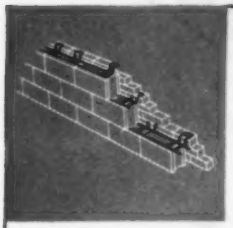
The project is a semi-outdoor powerhouse designed to withstand the damaging effects of flood. Outside dimensions will be 175 ft. by 116 ft. by 87 ft. high. The construction area has been separated from the river course by a low temporary levee around the area for the period of construction. The foundation of the plant is at the bottom of an excavation to a depth of 51 feet below the river surface. On completion of the project, the river will be returned to its original channel. The powerhouse will extend 36 ft. above the normal river level.

Noble-Mobile is manufactured by the Noble Co., Oakland, Calif.

NEW! MASONRY REINFORCING

BY MANUFACTURERS OF BLOK-LOK

for increased block sales



NEW! . . . ECONO-LOK* CAVITY

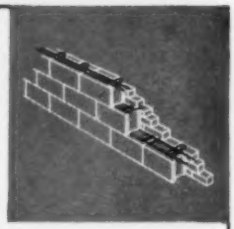
This all flush welded masonry reinforcing relieves horizontal stresses in the back-up wall and ties it firmly to the exterior wall in one operation. Adds lateral strength! Minimizes mortar shrinkage and settlement cracks. Moisture drip U-BAR on 16″ centers eliminates moisture conduction. Available in 12′ lengths of all 3/16″ wire. (9 U-BARS per 12′ pc.)

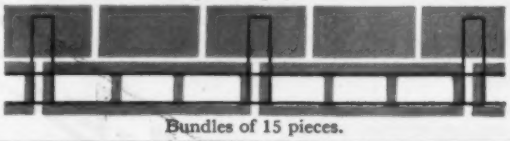
Bundles of 15 pieces.

NEW! . . . ECONO-LOK*

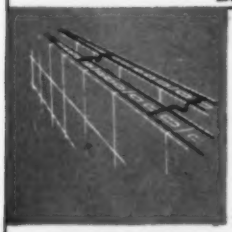
ELIMINATES TROUBLESOME HEADERS

Designed specifically for solid masonry . . . block back-up with brick face. ECONO-LOK'S two heavy lateral rods are the answer to controlling mortar shrinkage and settlement cracks and, at the same time, they tie-in the brick face with ECONO'S U-BAR on 16″ centers. Available in 12′ lengths of all 3/16″ or #9 wire. (9 U-BARS per 12′ pc.)



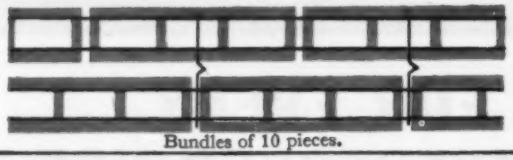


Bundles of 15 pieces.



CAVITY-LOK*

A combination of four lateral heavy steel rods, joined by flush welded cross bars with a positive action moisture drip. With CAVITY-LOK you get the strength of two reinforced masonry walls in one. Available in 10′ lengths with cavity ties on 16″ centers. All 3/16″ wire (8 ties per 10′ pc.) Get all the facts on CAVITY-LOK today!



Bundles of 10 pieces.

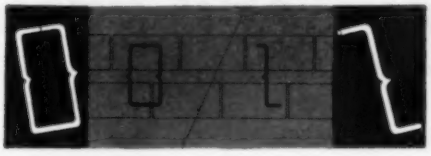
BLOK-LOK

for solid masonry walls; for brick with block back-up; for block construction. BLOK-LOK flush welded joints give you thin, consistent masonry joints with the utmost structural strength. Block cavities are not obstructed. Shrinkage and settlement cracks are minimized. Available in 10′ or 12′ lengths in various widths, gauges and finishes.

End-capped in bundles of 25 pieces.

CONTROL-TIE

Designed and manufactured specifically to provide positive tie in continuous vertical control joints.



Rectangular Cavity Tie and Z Bar for Cavity Walls

All 3/16″ wire, copper cased, galvanized or hot-dipped galvanized finish.

All products available in various finishes

FAMOUS FLUSH WELD

Columbia University's comparison tests show BLOK-LOK's flush weld is up to 65 times stronger.

PARTITION-LOK*

Used at all intersections with interior bearing and non-bearing partitions.

CORNER-LOK (prefabricated)

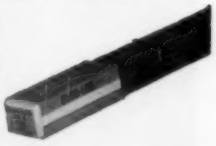
Corners are reinforced simply and economically with CORNER-LOK.

FREE . . . WRITE TODAY!

For . . . New BLOK-LOK & Concrete Block Wall Calculator. Use height and length of the wall and Calculator tells you number of concrete blocks required . . . as well as amount of BLOK-LOK.

PACKAGED FOR CONVENIENT HANDLING

Printed sizes on end of boot for easy identification. Booted ends eliminate "fanning out" and cuts in handling.



AA WIRE PRODUCTS CO.

7211 COTTAGE GROVE AVE., CHICAGO 19, ILL.

Phone: RAdcliffe 3-8313

NAME_____

ADDRESS_____

I am a ☐ BLOCK MFR. ☐ READY-MIX PRODUCER ☐ CONTRACTOR

☐ I am interested in becoming a BLOK-LOK distributor.
☐ Send me literature and prices.
☐ Send me (FREE) new block and BLOK-LOK calculator.

* Pat. Pending. Copyrighted 1957, AA Wire Products Co.

The High Speed GRIFFIN Portable Cement Loader

WORKS AT ANY ANGLE
UP TO 300 BBLS./HR.
11' TO 100' IN LENGTH

from bulk cement car

10-DAY DELIVERY

Write for Details

to truck

CEMENT Z-Z-Z-Z-Z-Z-OOMS!...in the "ZOOTER"

"ZOOTER" is the modern, simple, economical way to *speed-load* trucks, bins, mixers and batchers from bulk cement cars.

Proved in scores of installations. Operates just as smoothly and easily in vertical position. Cuts loading time and labor costs to minimum.

View at right shows 11 foot unit with wheel-mounted, welded steel tubing frame, adjustable for height, and all accessories for feeding vertically to 21 feet. Price $1259.00, F.O.B. Honeoye, N.Y.

Also available in standard 11' to 30' lengths—over 30' multiple sections used.

Prices subject to change without notice.

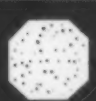
LARRY GRIFFIN CORP., 1001 James St., Syracuse, N. Y., Phone: 73-1514

ATLAS FORMS FOR EVERY PRECAST AND PRESTRESSED USE

Look to Atlas for every type of form for precast and prestressed concrete. Atlas engineers welcome the opportunity to provide services in connection with mold requirements and usage, design methods, plant layout and all other forming problems.

PROMPT SHIPMENTS

SEND FOR BULLETIN AND DETAILS

	DOUBLE-TEE SLABS		GIRDERS
	I BEAMS		BRIDGE DECKS
	PILES		JOISTS

Consult Us Before Buying Forms for Prestressed or Precast Concrete

IRVINGTON FORM & TANK CORPORATION

Dept. CM, 20 Vesey Street New York 7, N. Y.

T-11

BIG BUSINESS

Ready-Made Markets Await Local Manufacturers of Concrete Drain Tile

Many millions of concrete drain tile are annually produced — for a variety of uses — by a chain of local plants, each operating to supply regional demands, and under economic conditions most favorable to low-cost production and high-income potentials. Today's demands and tomorrow's sale possibilities are expanding much faster than productive capacities, and opportunities are open for many more local sources of supply. This has tremendous interest for those now manufacturing other concrete products because it's a low-investment opportunity.

This unretouched photograph shows representative examples of drain tile. Clay tile is at left; concrete tile at right. Note the roundness, cleanness and ribbed heft of the concrete tile. Also note the absence of distortion and shaling.

The Champion is backgrounded by fifty years of drain tile machine building. Compact, simple, low priced. With automatic feeder, it reduces manufacturing to a one-man operation. Makes all sizes 3" to 12" diameter. Write for descriptive literature and other interesting information.

W. E. DUNN MFG. CO.

532 W. 24th Street Holland, Michigan

980 Dundas Highway, Cooksville, Ontario, Canada

HEAD CLEARANCE PROBLEMS . . . . . ?

your answer is

MULTI-LIFT

by truck-man

STARTS LOWER • LIFTS HIGHER • FOR LESS

If you have a low entrance, connecting door or are having trouble handling racks in low ceiling kilns, Truck-Man's new Multi-Lift Mast will solve your problem.

- LOWEST DOWN HEIGHT—Only 72" for a full 144" lift—62" for 120" lift—others available.
- INCREDIBLY SIMPLE— no latches, ratchets or complex mechanisms.
- NOT HIGH FREE LIFT—but in most cases it takes the place of HFL and, at much lower cost.
- IMPROVED VISIBILITY—through the mast, below eye level when lowered.
- AVAILABLE NOW—on all Truck-Man indoor and yard high lift models.

COMPARE DOWN HEIGHTS!

For 144" lift; conventional mast (left) has down height of 92" vs. only 72" for Multi-Lift mast (right). For 120" lift, conventional mast has down height of 83" vs. 62" for Multi-Lift.

Write today for your copy of the folder describing the revolutionary new Multi-Lift mast.

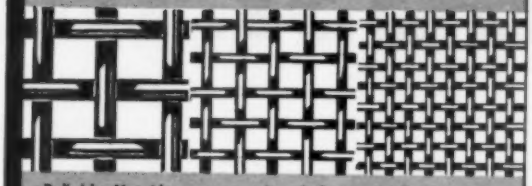
truck-man

DIV. OF THE KNICKERBOCKER CO.
571 LIBERTY ST. • JACKSON, MICHIGAN

STRONG AS ARMOR

NAT-ALOY

Woven Wire Screens



Reliable Nat-Aloy woven wire cloth is specified throughout industry for maximum screening accuracy and economy.

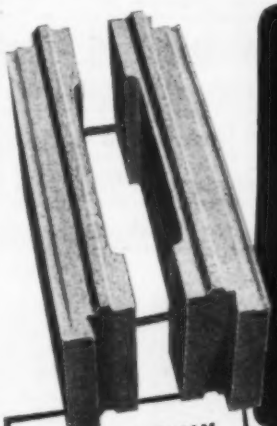
Available in flat surface, lock crimp, double crimp, rectangular and long slot openings. All sizes, meshes and gauges—prompt shipment.

WE OFFER NOW . . . SUPER NAT-ALOY OIL TEMPERED WOVEN WIRE CLOTH

★ GREATER RESISTANCE TO ABRASION
★ MORE TONNAGE AT LOWER COST
★ FEWER COSTLY CHANGE OVERS

Write for information. Also stainless steel wire screens.

NATIONAL WIRE CLOTH COMPANY
252 W. Fairfield Ave., St. Paul 1, Minnesota



AUTOMATICALLY PRODUCED . . . on high speed, fully automatic, easy-to-operate machines.

NOW *You* CAN CAPITALIZE ON THE TREMENDOUS DEMAND FOR

PRESTO BLOCK...

the only *True Air Cavity* block with complete built-in moisture and climatic insulation!

Aggressive block and ready-mix producers can now get in on the ground floor with this HIGHLY PROFITABLE NEW PRODUCT!

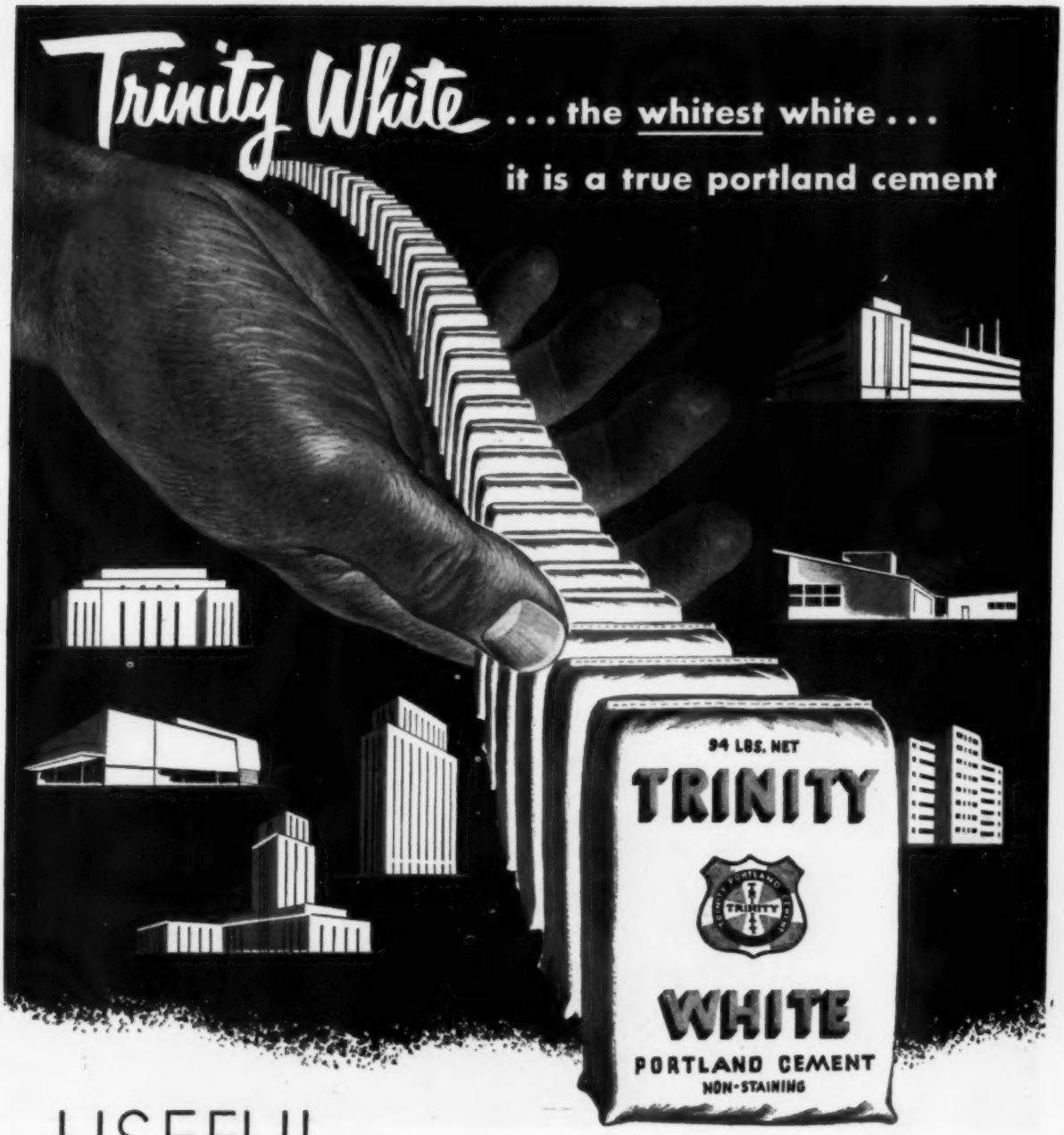
Write today for franchise manufacturing information about Presto Block.

©Presto Brick Machine Corp. 1957

PRESTO BRICK MACHINE CORPORATION
Empire State Bldg., New York, N. Y. • Pennsylvania 6-1353

Trinity White ... the whitest white ...

it is a true portland cement



USEFUL in almost every type of building, both inside and outside. As architectural concrete units or as stucco or cement paint, it emphasizes architectural perspective and detail. It has a high light-reflection which gives beauty and special utility to many interiors.

¶ Trinity White's extra whiteness gives truer colors where pigments are added. Widely used in terrazzo for its contrast-y white and better color effects in either simple or ornate designs. Meets all Federal and ASTM specifications. Ask for TRINITY White.

as white as snow

A Product of GENERAL PORTLAND CEMENT CO. • Chicago • Dallas • Chattanooga • Tampa • Los Angeles

HAUL 6½ YDS. WITHIN

Low-weight chassis design of New Reo F-506M guarantees it!

POWERED BY REO'S OWN OH 160 GOLD COMET ENGINE—GAS OR LPG... BACKED BY REO'S OWN 100,000 MILE OR 1-YEAR ENGINE WARRANTY!

The certified chassis weight of Reo's new F-506M is 11,240 lbs. The official weighmaster's receipt proves how it can haul 6½ yds. of concrete and stay well within legal limits. The new Reo F-506M is designed and built specifically for mixer use. Its increased payload is made possible by Reo's new high-strength, low-weight *double-side-rail frame construction.*

The new Reo F-506M actually hauls up to 2 yards more than the average mixer chassis. And it places as much as 6,000 pounds more on the front axle than other conventional mixer trucks.

Reo full power steering, which is standard, makes maneuvering easy in tight places anywhere.

The new F-506M is powered by Reo's own 160 hp short-stroke, wet-sleeve Gold Comet Engine. Plenty of power for both truck and mixer. And, it's backed by Reo's famous *100,000 mile or one year warranty.*

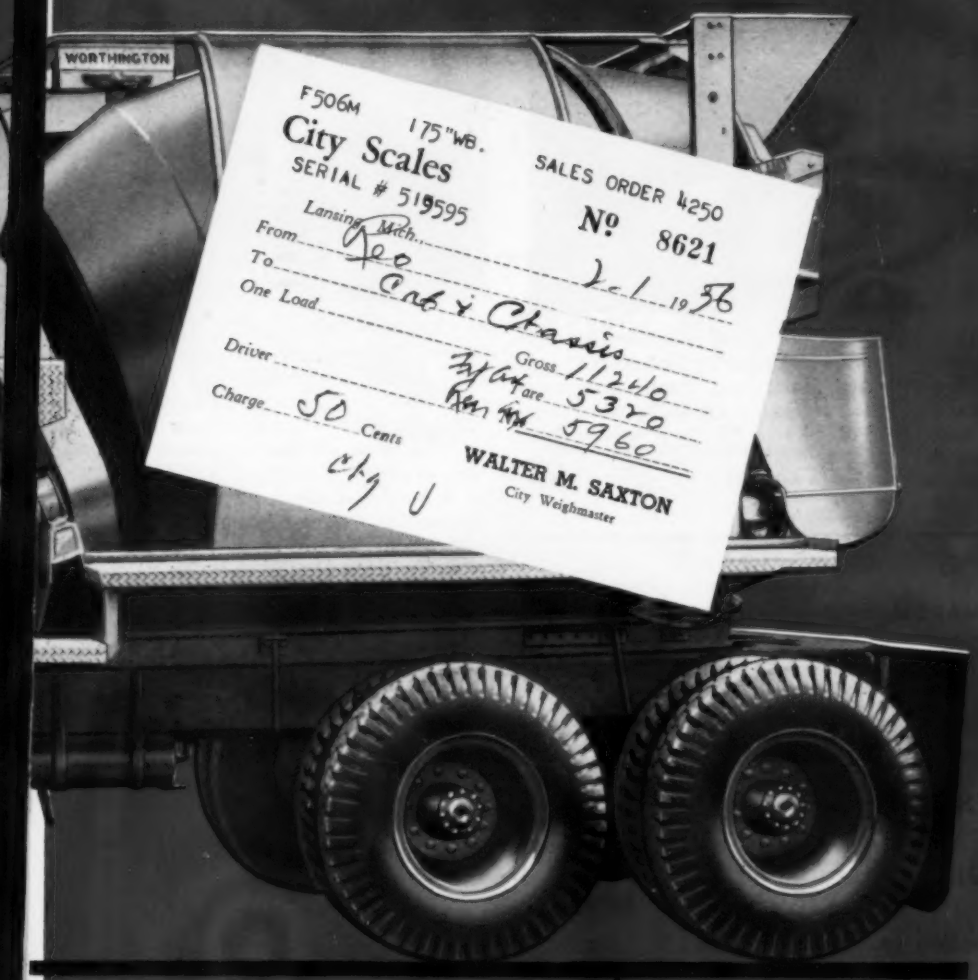
Reo's exclusive *front-axle-payload* design places more weight forward—giving you an extra 2 cubic yards of concrete every trip. With it, you can haul your regular daily volume with fewer trucks and drivers . . . or increase volume without increasing your fleet.

For states that permit greater axle loadings than 32,000 lbs., Reo builds the F-536M—52,000 lbs. G.V.W.

Additional hundreds of pounds can be added to the carrying capacity of the new Reo F-506M with Reo's optional front-end power take-off. The PTO also eliminates extra fuel and maintenance costs of the mixer's auxiliary power unit.

Call your Reo branch or distributor today and get the facts on the Reo that's right for you. Mail the coupon for full information.

32,000 lb. TANDEM LIMIT



REO

REO MOTORS, INC.
LANSING 20, MICHIGAN
SUBSIDIARY OF BOHN ALUMINUM AND BRASS CORPORATION

Please send at once:

☐ Complete Specifications on F-506M. ☐ Reo Front-End Power Take-off. ☐ New Tandem Catalog.

NAME_____
COMPANY_____
TITLE_____
ADDRESS_____
CITY_____ COUNTY_____ STATE_____

CM New Machinery and Supplies

• This Mack B-80 series truck chassis, carrying a 7½-cu. yd. Rex Adjusta-Wate Moto Mixer, was exhibited at the A.R.B.A. Road Show. Available in four- or six-wheel models, the B-80's may be powered with 170- to 205-hp. Mack Thermodyne gasoline or diesel engines or with stock diesels in the 250 to 330 hp. class. Mack truck chassis accommodates 7½ to 8½ cu. yd. capacity concrete mixers. Larger mixers are accommodated through special provisions. **(101)**

• Case-TerraTrac Model M-3, a crawler-mounted fork lift designed for handling materials on all types of terrain, has a lifting capacity of 3,500 lb. with 9-ft., 12½-ft., or 14-ft. 3-in. mast. A mast extension is also available for lifting 1,750 lb. to a height of 21 ft. 4 in. Interchangeable mounted equipment, in addition to 36- and 42-in. forks, includes a hydraulically operated ¾-cu. yd. loader, and 1/3- and ½-cu. yd. cement or bulk material buckets. **(102)**

• Thermo Stone Brick, a patented, low-cost, fireproof building block, can be produced in stretchers, corners, halves, and lintel or veneer on this new block machine designed for the small plant operator by the Thermo Stone Brick Company. The machine also produces plain 12 in. Roman block and patio tile. **(103)**

MARCH, 1957

MORE INFORMATION PLEASE

THE CONCRETE MANUFACTURER
431 S. DEARBORN ST.
CHICAGO 5, ILLINOIS

Please send more information on items described in editorial columns of this issue, as circled below.

101 102 103 104 105 106 107 108 109 110
111 112 113 114 115 116 117 118

Name_____ Title_____

Company_____

Address_____

City_____ Zone_____ State_____

put the *Erickson* "workhorse team" to work in *your* plant!

ERICKSON FK-60 FORK LIFT TRUCK

Here's the pair of Ericksons that have proven themselves the BACKBONE OF BLOCK PRODUCTION. Erickson's rugged dependability and long life have won its reputation as "the workhorse of lift trucks". Erickson trucks are custom-built to fit your needs.

ERICKSON AR-TIC-U-LATED PLATFORM TRUCK

OVER 1,000 BLOCK PLANTS cut costs with *Erickson*

The ideal truck for the concrete industry. Ericksons have a proven 30-year record for low-cost handling cubed blocks in the yard — stockpiling, loading and unloading delivery trucks.

A revolutionary new idea for speed and maneuverability handling heavy loads in close quarters. This new Erickson is AR-TIC-U-LATED—with a pivot between platform and drive wheels which gives the effect of 4-wheel steering. Platform beds up to 10 or 12 feet long.

ERICKSON POWER LIFT TRUCKS, Inc.

225 St. Anthony Blvd. N. E. • Minneapolis 13, Minn.

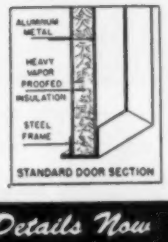
SAVE FUEL • REDUCE CURING TIME
CUT COSTS • UP PROFITS
with *Standard* KILN DOORS!

WHERE AISLE SPACE IS LIMITED STANDARD sliding doors need no aisle space. The carrier-type door (shown) requires 15" minimum clearance above top of door opening. A vertical sliding door, counterweighted for easy opening, is also available.

WHERE HINGE-TYPE DOORS ➡ ARE PREFERRED Choose from two STANDARD hinge-type doors. The top-hinging door (shown) can be used when there's insufficient room at sides of door. The conventional side-hinging door has rugged hinges and positive-seal lock.

CHECK THESE FEATURES

- √ Heavy Aluminum Sheets on Both Sides of Thick Vapor Proofed Insulation.
- √ Rugged Steel Frame.



STANDARD DOOR SECTION

Get the Best — Send for Details Now

STANDARD DRY KILN COMPANY

P. O. BOX 3708 . . . . INDIANAPOLIS 21, IND.

Tough . . . Flexible
"Pylox" Coated Jersey

No. 5062

Stanflex® GLOVES

Tear, snag, abrasion resistant "Pylox" coated jersey outwears leather and cloth . . . stays flexible in coldest weather. Non-slip satin finish. Seamfree work surface. Knit wrist, 10" band top, 12" and 14½" gauntlet styles available. Select the right gloves for your job from the complete PIONEER line.

MAIL THIS COUPON TODAY

The PIONEER Rubber Co.
271 Tiffin Road,
Willard, Ohio, U. S. A.

Pioneers in Hand Protection — For Over 50 Years

Please send me:
- ☐ The name of my nearest PIONEER Glove Distributor.
- ☐ 1956-57 PIONEER Industrial Glove Catalog.
- ☐ Hand Protection Clinic glove recommendation for job described in enclosed letter.

FIRM_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

SIGNED_____

KOGL'S

Patented

UNIT STEP

One-piece

Non-skid

Precision-Perfect

Concrete Step

CONVENIENT • PERMANENT • ATTRACTIVE

Unit Step Forms made in standard widths of 4, 5 an 6 feet. 1 to 6 risers high, one piece, with or without platforms. Steps and railings available in unlimited variations.

Write for full details

UNIT STEP FORM CO.

S. Robert Road, R. 10, South St. Paul, Minn.

NEW GOVERNMENT RELEASE!

UNUSED

CAB-OVER-ENGINE GMC 6x6 ARMY TRUCKS

- **Unused and Guaranteed!**
- **Factory-New Performance!**
- **Two Cost Less Than One!**
- **Delivered on Approval!**

TWO of our Unused and Guaranteed 6x6 Cab-Over-Engine GMC's cost LESS than ONE new truck . . . give GUARANTEED NEW PERFORMANCE!

Special cab-over-engine design with extra frame length means increased load capacity, BIG SAVINGS TO YOU!

Tandem axle with front wheel drive available with 17' all-steel bed, wooden side boards. DELIVERED ON APPROVAL!

For specifications, prices, delivery. Write, wire or phone collect JAckson 5-7841
MILTON Y. TOOMBS, JR.,
Sales Manager

MEMPHIS EQUIPMENT Company

CONSTRUCTION AND AUTOMOTIVE EQUIPMENT AND PARTS

766 S. THIRD ST. MEMPHIS 2, TENN.

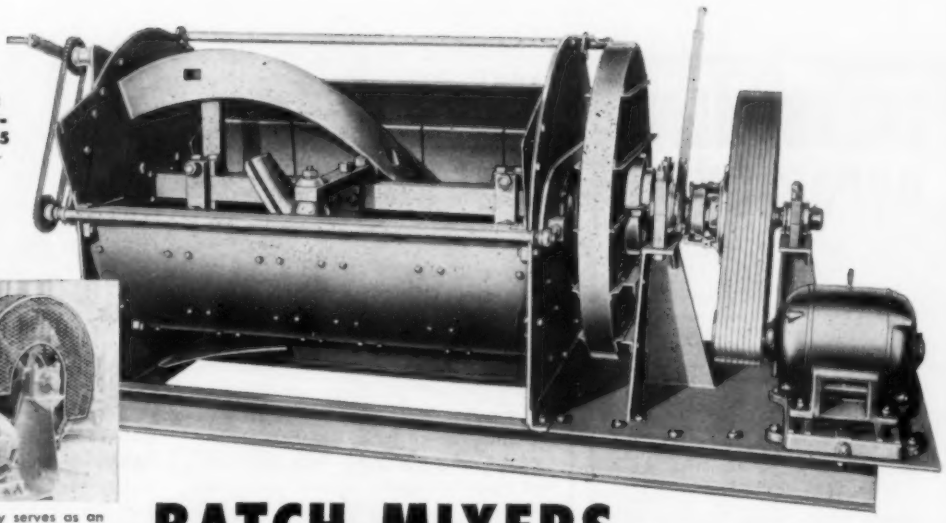
• Among the new lift trucks, attachments, and auxiliary equipment for the concrete industries soon to be introduced by the Hyster Company is the Model 50 fork lift, a 5,000-lb. capacity unit with torque converter transmission. Mounted on pneumatic tires, the Model 50 is equipped with block forks and side-shift which hydraulically positions the loads sideways. **(104)**

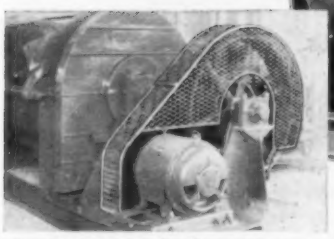
• Soiltest, Inc., has designed a new machine for the compression and flexure testing of materials such as concrete and mortar. Called the Versa-Tester, the machine has a load capacity of 30,000 lb., and is said to be accurate to within 1 percent of indicated load. Maximum specimen clearances are 12 in. wide by 18 in. high. Test loads are indicated on a large dial which is fitted with a maximum load pointer. The loading rate is adjustable up to 6 in. per minute. Two controls operate and adjust the machine. **(105)**

• The Helco-matic Batchmaster, an electronic weigh batching system that works in conjunction with IBM's punch card system, has been perfected by The Heltzel Steel Form and Iron Company. Housed in a compact console, the unit automatically selects and weighs out the exact amount of any number of materials. To get any batch required, the operator simply inserts a punch card in the slot provided. This automatically activates the Helco-matic which then controls the weighing apparatus, gates and valves, to weigh out accurately the desired mix. Selection can be changed instantaneously by inserting another card. When repetitive batches are required, the Helco-matic provides for automatic recycling. **(106)**

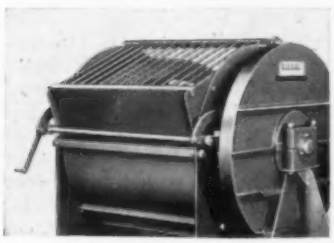
• The 1957 model 5-cu. yd. capacity Rocket truck mixer, mounted on a 1957 Chevrolet chassis, was introduced at the A.R.B.A. Road Show by the Concrete Transport Mixer Company. A new mechanical revolution counter which gives all of the proper drum speed settings, automatic hydraulic chute control, and an aluminum detachable extension chute are standard equipment. **(107)**

Capacities: 5-12-18-25-30-40-50-75 cubic feet.





Guard for mixer and pulley serves as an added safety precaution.



Drum grid cover permits quick charging with complete safety.

BATCH MIXERS Manufactured by the makers of the world-famous VIBRAPAC

• Besser Batch Mixers have long been regarded as the standard for the industry. Features include: Twin Spiral Blades made of Ni-Hard abrasion-resisting iron—Quick acting, air-operated discharge gate with strong cylinder action. Entire contents of mixer drum discharged in 15 to 20 seconds —Special alloy shafting ground on bearing surface to insure proper fit—Steel cut gears operate in a continuous oil bath—Reversible main gear made of special alloy steel, properly stress relieved and hardened to give extra long wear—Fully enclosed, anti-friction bearings assure smooth operation. Write for Bulletin No. 111A.

BESSER Company Box 131, Alpena, Mich., U. S. A.
Complete Equipment for Concrete Block Plants

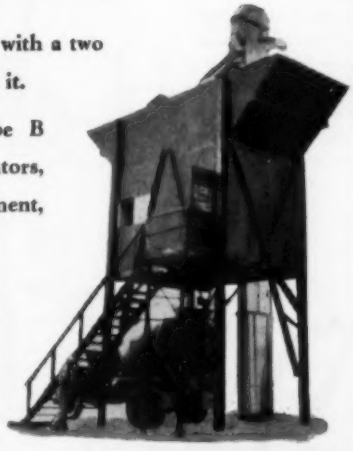
A7-118

WE REPEAT!

WHEN 100-125 YARDS A DAY IS ENOUGH—

The 47 Ton Simplex with a two yard batcher will do it.

Charged by two type B enclosed bucket elevators, for aggregate and cement, and equipped with a 100 Bbl. auxiliary cement storage (total capacity 175 Bbl.) and reclaiming equipment, the price is



FOB CAMDEN, OHIO $10338.00

GWYNNE Concrete Plants BIN BATCHER
J. H. GWYNNE, INC. CAMDEN, OHIO

Tufhorse KANT-RIP MITTENS HAND PADS GLOVES

PROTECT WORKERS' HANDS!

HEAVY SPLIT-COWHIDE MITTEN NO. 300. $12.60 PER DOZEN PAIRS.

Avoid costly injuries to the hands of your workers by giving them the protection they need—Tufhorse gloves, hand pads or mittens. Made of the finest cowhide, they are flexible and comfortable to wear.

ORDER SAMPLE PAIRS AT "PER-DOZEN" PRICES

Please send me samples of ✔
☐ Glove No. G-9 ($16.50 per dozen pairs)
☐ Mitten No. 300 ($12.60 per dozen pairs)
☐ Hand Pad No. 308 ($7.20 per dozen pairs)
(All F.O.B. Des Moines)

Name_____
Firm_____
Address_____
City_____ State_____

DES MOINES GLOVE & MFG. CO.
DES MOINES, IOWA

$ INVESTMENT OPPORTUNITY

Make your money earn real profits for you by investing in EFCO Steel Forms for your concrete construction. Original cost is low. Lifetime steel faces should never need replacing.

Owners of EFCO Forms are furnished form erection drawings without cost. These forms are adaptable to wide use, including construction of house foundations, and other large and small form requirements. They are easily and quickly assembled, and can be moved economically from job to job.

Although EFCO Steel Forms are available only on a purchase basis, other forms from Economy are available on a rental basis. Write Economy Forms Corporation, H. P. Station, Box 128, Des Moines 13, Iowa, for catalog and full address of office serving your area.

Other offices are in St. Louis, Mo.; Kansas City, Mo.; Lincoln, Nebr.; Minneapolis, Minn.; Ft. Wayne, Ind.; Milwaukee, Wisc.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Metuchen, N. J.; Rochester, N. Y.; Springfield, Mass.; Waltham, Mass.; New York, N. Y.; Washington, D. C.; Decatur, Ga.; Charlotte, N. C.; Dallas, Texas; Tulsa, Okla.; Houston, Texas; Los Angeles, Cal.; Oakland, Cal.; Denver, Colo.

Cardinal

SUSPENSION HOPPER SCALES
For ACCURACY + DURABILITY
Weighing Cement and Aggregates

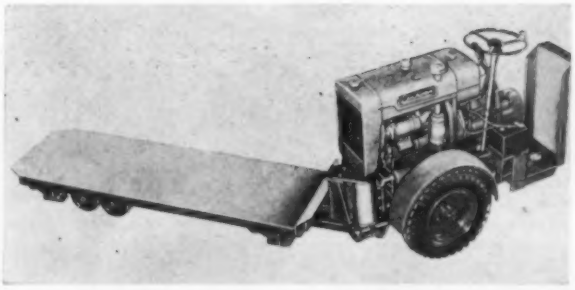
CARDINAL SCALE installation in Mobile Mix, Inc., plant, Hutchinson, Kansas.

Tested-and-proved Cardinal Dial and Beam Scales are used in leading concrete batching plants.

CARDINAL SCALES are highly flexible—can be installed into any special equipment. Suitable for all hopper sizes and shapes. Capacities: 500 lbs. to 100,000 lbs. Write for full details.

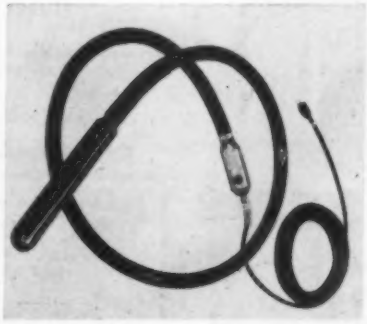
Dept. PQ

CARDINAL SCALE MANUFACTURING CO.
P.O. BOX 28 WEBB CITY, MO.

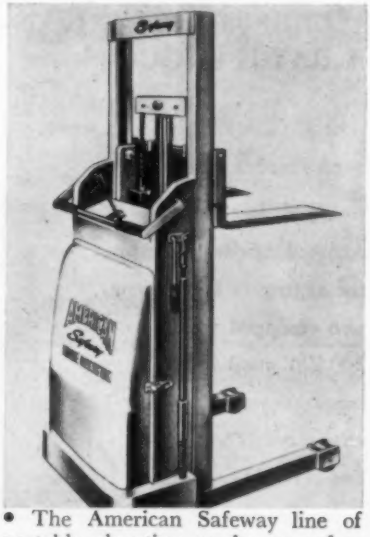


• Designed to handle heavy loads in close quarters, the Artic-u-lated platform truck, manufactured by Erickson Power Lift Trucks, Inc., is jointed between the platform and power unit to give the effect of 4-wheel steering. By pivoting in the middle, this platform truck has greater speed and maneuverability in handling racks from block machine to kiln or autoclave. The platform bed rises vertically without swinging up or tilting back, enabling the operator to stack materials close together. The Model P-7A (illustrated) has a capacity of 7,000 lb. Larger models up to 15,000-lb. capacity are available. **(108)**

• A new wet-cutting 3-ply reinforced breakage-resistant abrasive blade for masonry cutting has been developed by the Eveready BrikSaw Company. The new Tuffie comes in a complete range of specifications for cutting all types of masonry materials. Available in 14-in. diameters, it can be used on all makes of wet-cutting masonry saws. **(109)**



• Because of its motor-in-head construction, the new CV-2 concrete vibrator recently introduced by the Thor Power Tool Company can be operated easily by one man. The universal-type motor powers the vibrating head 15,000 r.p.m. without load and at 12,000 r.p.m. in 2-in. slump concrete. Thermal controls automatically shut off the current in case of excess heat or overload to prevent motor burnouts. The CV-2 is available in three models: Model CV2-10 with 10 ft. of hose; CV2-20 with 20 ft. of hose; Model CV2-210 which features a 10-ft. length of hose on each end of the switch. **(110)**



• The American Safeway line of portable elevating trucks, manufactured by The American Pulley Company, has been completely redesigned for more dependable service and for easier, safer operation. Maximum loads range from 1,000 lb. for the pedal-operated models to 1,500 lb. for the battery-powered type. Standard models lift as high as 96 in. **(111)**

NOW cut concrete costs with FOR-AIR

AIR ENTRAINING AGENT

FOR-AIR adds air to CONCRETE and increases resistance to freezing and thawing

Forrer's is foremost again in the concrete field with a superior product — for less cost. The new FOR-AIR 98-B (Air Entraining Agent) adds air to concrete, increases resistance to damage caused by freezing and thawing. Other advantages — increased plasticity of mix, reduced bleeding, decreases water requirements and segregation. It makes concrete more impermeable and acts as an integral waterproofing agent. It does not reduce strength.

- Used on Air Force Runways
- Conforms to Federal — A. S. T. M. Specifications
- Approved by State Highway Commissions
- Available in 5 gal. pails and 55 gal. drums

Order a trial sample today!

here are the cost-saving facts!

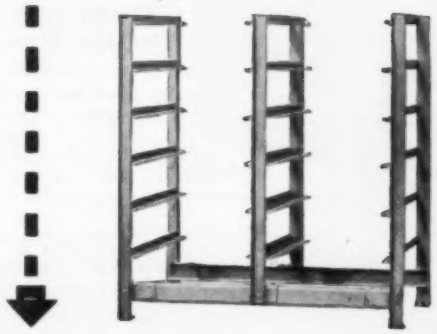
FOR-AIR 98-B is a Concentrate. Just ⅓ ounce of concentrate entrains 3 to 6% Air. Use 2 gallons water to gallon of For-Air mix. (1 gallon makes 3 gallons.) You save over 58% on original cost. Plus saving 200% on freight costs. Order today!

Forrer's
PRODUCTS FOR MASONRY
SINCE 1926

FORRER'S — Division of SPRAY-O-BOND CO.
2225 N. Humboldt Ave., Milwaukee 12, Wis.

CHASE BLOCK RACKS, PLAIN STEEL PALLETS

Your best buy

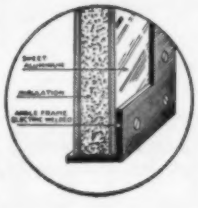


Here's why . . . Standard style or specially designed, Chase racks meet your requirements. They're shipped painted and knocked down—assembly is easy—no special tools or welding needed. Chase experience means low prices and years of dependable service. Check Chase prices.

Chase FOUNDRY & MANUFACTURING CO.
2300 PARSONS AVENUE • COLUMBUS 7, OHIO

Moore Carrier-Type Doors at Maule Industries, Miami

Moore Metal-Insulated Kiln Doors Save Fuel—Reduce Curing Time



Keep heat where it belongs — inside the kiln — with Moore Aluminum-Insulated Doors. They improve curing conditions — save steam — last longer.

Send us dimensions of present door openings for quotation.

MOORE DRY KILN COMPANY
Oldest and Largest Manufacturers of Dry Kilns and Veneer Dryers
JACKSONVILLE, FLORIDA · BRAMPTON, ONT., CANADA · VANCOUVER, B. C., CANADA · NORTH PORTLAND, OREGON

CONCRETE COMPANY SAVES COST OF LIFT TRUCK IN FIRST YEAR

Orderly, compact stacking is possible.

Fast truck loading speeds customer delivery.

JANESVILLE, WISCONSIN—Through first year savings of one man and a machine, the Janesville Sand and Gravel Company has matched in materials handling savings the cost of their 8000 lb. capacity Hyster Lift Truck. The company manufactures a Waylite block weighing 32¾ lbs. (per 8" block). The 8000 lb. Hyster lift truck replaced two 4000 lb. lift trucks and does twice the work of one machine, thus saving the cost of one smaller lift truck, its upkeep, and wages of one operator. With the special block handling forks (available through all Hyster dealers) the 8000 lb. pneumatic tire Hyster truck handles 180, 8" Waylite blocks, 120, 12" Waylite blocks or 80, 12" sand and gravel blocks. After the first year of operation, the savings go directly into profit. Your Hyster dealer makes it his business to keep up with materials handling progress in the industry. Call him today—he may save you up to 80% of your present handling costs.

Picking up a load of blocks.

Call your Hyster Dealer today. He is listed in your telephone directory under "Trucks-Industrial"

HYSTER COMPANY

HYSTER

Hyster Industrial Trucks Increase Profits for Concrete Products Plants

2926 N. E. Clackamas.....Portland 8, Oregon
1026 Myers Street.....Danville, Illinois
Hyster N.V. .....Nijmegen, The Netherlands

FACTORIES: Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands

New Literature

Tilt-Up mixers, 1- to 7½-cu. yd. capacity, are described in a booklet released by the *L. Burmeister Company*. Specifications and photos are included. **(112)**

Unitizing concrete block with steel strapping cuts material handling costs, according to a bulletin released by the *Acme Steel Company*. Illustrations depict the entire system of steel strapping concrete block for transportation on lift trucks. **(113)**

Portable belt conveyors, useful in conveying concrete from the ready-mix truck to elevations up to 20 ft. at 30 deg., are described in a bulletin offered by the *Sam Mulkey Company*. Features, application photos, and specifications are included. **(114)**

20- to 25-ton capacity American Eagle portable truck scales are presented in an illustrated folder available from the *American Scale & Vise Company*. Features of the scales are discussed, and sizes of the different capacity models are given. **(115)**

"How to Conduct a Ready Mix Concrete Plant Open House" is the title of a publication sponsored by the Committee on Public Relations of the *National Ready Mixed Concrete Association*. The booklet offers suggestions to the ready mix plant operator for inviting the public to view his plant. **(116)**

Concrete pipe machinery manufactured by the *Hydrotile Machinery Company*, is featured in a catalog which includes specifications of the four illustrated models. Descriptive data is included. **(117)**

Dyna-Chute hydraulic controls for ready-mix trucks are described in a booklet released by the *Monarch Road Machinery Company*. The booklet pictures Dyna-Chute units in use on concrete pouring jobs. **(118)**

Edmont Case No. 475: Handling finished concrete products, plastic treated gloves lasted for 2 shifts. Edmont No. 31's with **triple-thick** palm coating, wore up to 8 shifts, cut costs more than 50%.

Job-fitted gloves cut costs over 50%

No. 31
triple-coated palm

The actual wear report given above is typical of the experience thousands of users have had with Edmont "job-fitted" gloves. In this case, Edmont No. 31's were recommended for the job because their triple-thick plastic coated palms outwear any other gloves made for handling rough concrete and cinder blocks. These gloves also give a better grip to prevent accidents and breakage.

Free Test Offer To Listed Firms: Tell us your operation and materials handled. Without cost, we will send you recommended gloves for on-the-job testing.

Edmont Manufacturing Company
1208 Walnut Street, Coshocton, Ohio

Edmont
JOB-FITTED
GLOVES

FOR GREATER PROFITS — BUILD APPROVED
CONCRETE SEPTIC TANKS with

NORWALK
EQUIPMENT

Build rectangular concrete septic tanks that will meet the most rigid specifications of local health officers and sanitary engineers. Build them QUICKER and at LOWER COST with NORWALK septic tank molds.

Molds built to your requirements

Write for details

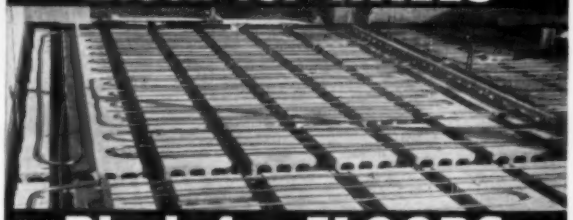
THE NORWALK VAULT COMPANY
Dept. CM • NORWALK, OHIO

DEPENDABLE
FOR 60 YEARS
ALLOY
Woven Wire
SCREENS

TWIN CITY IRON & WIRE CO.
St. Paul, Minnesota

Go After the Entire Market!

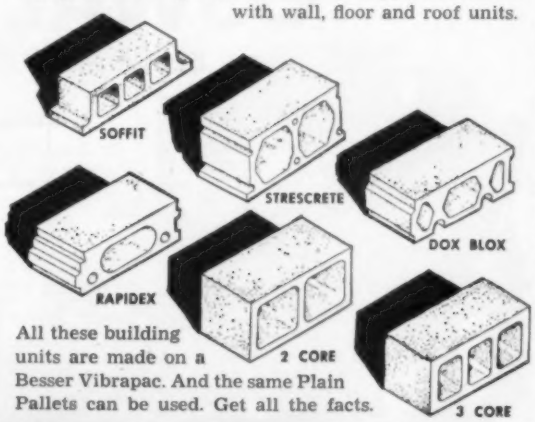
Block for WALLS



Block for FLOORS

Block for ROOFS

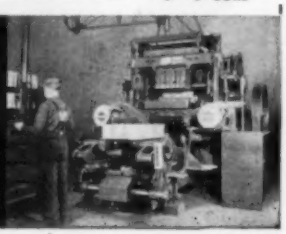
Fire-safe walls? Of course! But floors and roofs should be fire-safe, too. Walls are full of openings (windows, doors, etc.), while floors and roofs are relatively solid. Actually, TWICE the volume of block is required for floors and roofs than is required for walls. So why not go after this profitable market? Supply customers with wall, floor and roof units.



All these building units are made on a Besser Vibrapac. And the same Plain Pallets can be used. Get all the facts.

Write for Bulletin

BESSER COMPANY
ALPENA, MICHIGAN, U. S. A.
Complete Equipment for Concrete Block Plants



A 8658-½

NO NEED TO CHISEL

*Actual photo Falls Block and Supply Co. Menomonee Falls, Wisconsin

JUST SCRAPE . . . THEN "WHISK-IT" OFF!

NOW! Amazing... NEW KLEEN-MIX

HELPS WHISK OFF 'BUILT-UP' CONCRETE

KLEEN-MIX is the new easy way to prevent concrete "build up" on mixers, hoppers, conveyors, skip hoists, etc. For, KLEEN-MIX sprayed or brushed onto mixers cuts clean up time, reduces down-time and keeps equipment going longer. Apply KLEEN-MIX the night before then at the end of the next day — just use putty knife then "brush away" any build-up. No need to chisel, hammer and pound away. *Order a supply today!* Start saving time and money the day you use KLEEN-MIX.

Outstanding KLEEN-MIX Advantages

- Requires only brush and scraper for clean up.
- No chisels or air hammers needed.
- Cuts clean-up time in half.
- Increases life of machines and reduces down-time.
- So easy to apply — just spray on and let dry.

Forrer's
PRODUCTS FOR MASONRY
SINCE 1926

FORRER'S — Division of SPRAY-O-BOND CO. 2225 N. Humboldt Ave., Milwaukee 12, Wis.

3 STEPS to PROFITABLE BLOCK PRODUCTION

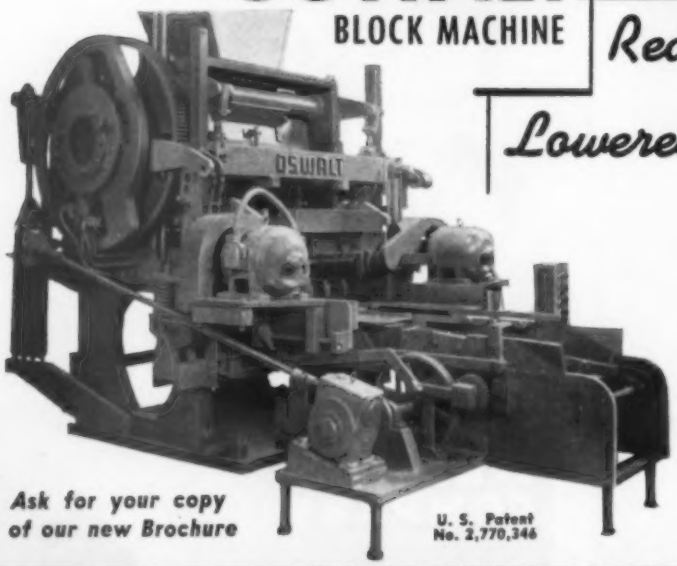
. . . . advantages of the new

OSWALT BLOCK MACHINE

Increased OUTPUT

Reduced MAINTENANCE

Lowered BLOCK COSTS



U. S. Patent No. 2,770,346

Users of Oswalt Block Machines report: Better Quality Blocks—Higher Production—Increased Plant Efficiency—Lower Operating Costs—and Big Savings on Cement, up to as much as $1000 per month in some cases.

Write us for actual details of performance records in recent Oswalt installations.

Ask for your copy of our new Brochure

OSWALT ENGINEERING SERVICE CORP. 1335 CIRCLE AVENUE • FOREST PARK, ILL. Phones: ESterbrook 8-4664 (Chicago) FOrest 6-2798 (Suburban)

Concrete Manufacturer Classified Section

431 S. DEARBORN ST., CHICAGO 5, ILL.

Advertising Rate Per Issue: $12.50 a Column Inch. Lower Rates on a Contract Basis — Write for Rate Card.

SUPERINTENDENT

To take charge of new plant located 75 miles from Chicago for large building materials company. Thorough knowledge of rotary kiln operations as applied to processing of expanded shale, cement, or burned lime, with minimum of five years supervisory experience in the field required.

Good salary, profit sharing, and other benefits. Reply giving work history and personal background.

BOX CM-3083, c/o THE CONCRETE MANUFACTURER
431 S. Dearborn St. Chicago 5, Ill.

FREE

EXCLUSIVE FRANCHISED TERRITORIES TO MANUFACTURE DAVIDSON CONCRETE GARBAGE DISPOSAL UNITS.

WRITE FOR DETAILS

Davidson Wilton, N. H.

WANTED

Young man to supervise yarding operations in a diversified concrete products manufacturing plant located in middle west. Must be able to maintain balanced inventory with limited space available. Will be required to maintain fork lift trucks, front end loaders and delivery equipment. Repair work must frequently be done after regular hours. Will be responsible for truck loadings so that good delivery schedule can be maintained. Split Block operation will also be under direction of this position. Previous experience in concrete products field will be required. Good wages for man with proper qualifications. Send picture and references. Also desired salary.

BOX CM-3073 c/o THE CONCRETE MANUFACTURER
431 S. Dearborn St. Chicago 5, Ill.

WANTED

Concrete plant operator wants location South or S.W. Executive, production, technical experience. Good ideas in plant design. Prefer central-mix plant in early planning stage.

BOX CM-3113 c/o THE CONCRETE MANUFACTURER
431 S. Dearborn St. Chicago 5, Ill.

SUPERINTENDENT WANTED

Concrete products and ready-mix plant. Must know all phases of manufacturing and maintenance. Excellent opportunity for go-getter . Complete resumé in first reply. Confidential. Write:

Box CM-1123 c/o The Concrete Manufacturer
431 S. Dearborn St. Chicago 5, Ill.

PLAIN STEEL PALLETS

made accurately
to
your specifications

THE REGENT STEEL CO.
3361 East 80th St., Cleveland 27, Ohio
Tel.—VUlcan 3-8500

WANTED

Used Superlite, Jiffy-Lift, or Side-O-Matic Unloader.

Lake Shore Cement Products
P. O. Box 371 Michigan City, Ind.
Phone TRiangle 2-7277

WANTED

Position as Plant Manager or Superintendent in plant manufacturing concrete masonry units. 22 years experience in management, and various phases of the industry. Prefer one of the western states. All replies confidential.

BOX CM-3043 c/o THE CONCRETE MANUFACTURER
431 S. Dearborn St. Chicago 5, Ill.

COLORS *For Cement and Concrete*

COLOR YOUR CONCRETE WITH LANSCO CEMENT COLORS, available in 40 ATTRACTIVE shades. Suitable for all types of concrete products. Write for our new color card, copy of "Suggestions For Using Cement Colors", and for free samples and price list.

Manufactured by:

LANDERS-SEGAL COLOR CO.
71 Delavan St. • Brooklyn 31, N. Y.

HIGH PROFIT LOW COST

Easy Stripping Metal Molds
•
Send for Free Bulletin

Here is a real money maker for that last bit of good cement from your mixer. Our completely new basement window sill fits 12" and 20" standard basement windows for 32" wall opening, @ $10.00, less 10% discount for ten or more. F.O.B. in lots of 10 they may be mixed for 8" wall 10" & 12" wall.

PARK MOLD & STEP CO.
1020 N. Raymond Rd. Battle Creek, Mich.

READY MIX PLANT (12)

Illness forces sale of Ready Mix Plant and real estate in Dayton, Ohio. Fully equipped plus 15 acre gravel pit with processing equipment. Excellent location. Real potential. Write:

BOX CM-3033 c/o THE CONCRETE MANUFACTURER
431 S. Dearborn St. Chicago 5, Ill.

FOR SALE

Kent blockmaker. Quincy air compressor. Kent continuous flow mixer No. 6 Flowmaster. Everything A-1. Good as new at a bargain. Capacity 5 to 6 blocks per minute.

GEORGE AASEN
385 Valinda Pl. Akron 4, Ohio
Ph: JE 5-7338

FOR SALE

Jackson and Church Six Pocket Brick Press
Jackson and Church Belt Feeder
11 Cu. Ft. Vertical Skip Hoist
11 Cu Ft. Dodson-McCord Batch Mixer
Good Operating Condition. Will Sacrifice.

BOX CM-3053 c/o THE CONCRETE MANUFACTURER
431 S. Dearborn St. Chicago 5, Ill.

PLAIN PALLET CLEANING

We truck our machine to your plant and supervise entire cleaning and planing off of pallet residue. No need to shut down as we will keep up with production.

EDWARD A. LOBSTEIN
5363 Seminole Ave. Detroit 13, Mich.
Phone: Walnut 2-1185

FOR SALE

Concrete Products Plant located at Buffalo, Minnesota—County Seat Town—Rich Farming and Dairying community—precast culvert and sewer pipe—block (sand and lightweight) Drain Tile—septic tanks—cesspools—lintels—anchor block, etc.—washing and screening plant and unlimited supply of material. Expansion possibilities great. Illness forces retirement.

W. S. Mattson, Owner
WRIGHT COUNTY CONCRETE CO.
Buffalo, Minn.

William A. **ANTHONY** *Engineering Company*

Engineers-Designers of
Complete Plants
Conveying Systems
CONTINUOUS MIXERS, Autoclaves
Special machinery

6656 PEARL ROAD
CLEVELAND 30, OHIO
TUxedo 4-8486

CONTRACTORS TRUCKERS DRILLERS CRANE OPERATORS
READY-MIX TRUCKERS LOGGERS MINE OWNERS PIPE LAYERS
CONVERT YOUR Rubber-Tire EQUIPMENT
to CRAWLER PERFORMANCE
Save 50%-ACT NOW!
MUD — SAND — SNOW — SWAMPS won't stop you! Flotation is increased 500%, and Traction 300%. TRUCK TRACK fits small as well as large tire sizes. Prices for single axle sets as low as $240.00 and for Tandem Axle sets, $468.00 F.O.B. Cleveland, Ohio.
TRUCK TRACK
Send for Literature and FREE ESTIMATE
TRUCK TRACK SALES COMPANY
3323 Broadway Ave. Cleveland 15, Ohio Phone DI 1-7373

SAVE $ $ $ ON . . .
"BRIKCRETE" MACHINERY

In near perfect condition—complete, ready to produce.

- Includes: Hydraulic Densifying Machine;
- #16 Mixing System; 10-Transfer Cars;
- 1—Lift Truck; 9—complete Mold Assemblies; Wood & Steel Pallets.

CAPABLE OF PRODUCING 5,000—8" OR 10,000—4" UNITS PER DAY

Will Sacrifice for Quick Sale

Write: ALPS, INC.

RD #6, VINELAND, NEW JERSEY or PHONE OXford 2-9191

FOR SALE

One L-5 LITH-I-BLOCK three block machine with automatic pallet return. Attachments for making 2" - 4" - 6" - 8" - 10" - 12" blocks; also chimney and manhole blocks. Additional equipment for making special blocks. All equipment is in excellent condition and may be seen in operation at our plant daily during March.

ARTHUR WHITCOMB, INC.
Keene, New Hampshire

CEMENT COLORS

All shades and grades the highest quality. Write for color cards, prices and samples

RICKETSON MINERAL COLOR WKS.
MILWAUKEE 2, WISCONSIN
Established 1885

FOR SALE

Lith-I-Bar L-5 block machine, 2 blocks per cycle, 720 per hour, 4" and 8" attachments, spare parts, in good condition, reasonable. Also 20 HP Ingersoll-Rand Air Compressor with Air Receiver and Air cooler, all in good condition, price reasonable.

SPEIGNER CONCRETE BLOCK CO.
DOTHAN, ALA. Phone: 2-5800

FOR SALE

One Praschak, two-block machine, complete with 4" and 8" cored pallets. Good working condition. Bargain.

FLEMING MANUFACTURING CO.
CUBA, MISSOURI • PHONE CUBA 400

FOR SALE

1—Model "R" McCracken pipe machine. Will make pipe up to and including 18" diameter, either 3' or 4' lengths. Machine as good as new.

NELSON CONCRETE CULVERT CO.
Box 245 Champaign, Illinois

STEAM CURING MACHINERY & EQUIPMENT

AUTOCLAVES
QUICK OPENING DOORS
SILENCERS,
EXHAUSTERS,
TEMP. & PRESS.
RECORDING METERS

SHORE ENGINEERING
322 BROADWAY
NEW YORK 7, N. Y.

KILN DOORS & CARRIERS
INSULATED CONCRETE
ROOF PLANKS
STEAM BOILERS,
HIGH & LOW PRESS.
DRYERS

FOR SALE OR TRADE
for TANDEM AXLE TRUCK

One No. 9 Jolterete with offbearer, dual vibrator and electric height control. 4, 8, 12, and chimney molds. Also pallets for 4" solids base for machine and approx. 50 racks.
One 20 cu. ft. Kelley mixer, direct drive motor and gearhead. Factory rebuilt last summer.
Will also trade for any other equipment that can be used in block business.
Reason for selling, have installed larger equipment.

BLEKIS BROS. CONCRETE PRODUCTS
Carter Road Plymouth, Conn.
Tel. ATlas 3-9808

SACRIFICE

$5000.00 Complete

Model K 47 Hydro-Korpak block machine with 5 HP, 3 Phase, 60 Cy. motor and attachments to make all standard 8" blocks, 25" Gyromatic mixer completely equipped with 10 HP. back geared motor, and hoist with 5 HP. back geared motor including magnetic switch for automatic safety stop at top and bottom.
1—Korpak Stripper block machine with power feeder and hopper with Nema type drip-proof motor.
3000 pallets—perfect condition.

MUST MOVE IMMEDIATELY

This equipment is in excellent condition and was used for experimental purposes only.

IDEAL ENGINEERING CO., INC.
4469 Bragdon St. Indianapolis 26, Ind.
Phone: Liberty 6-2403

FOR SALE
F & A Roof and Floor System Equipment

3—Multiple Vibrating Cradles with Air Vibrator
8—8" Aluminum T-Joint Forms—30' Long
8—6" Aluminum T-Joint Forms—30' Long
1—8" Besser Filler Block Mold and Stripper Head
1—6" Besser Filler Block Mold and Stripper Head
Overhead Electric Traveling Crane with ¼ Cy. Tilt Bucket and 1 Cy. Mixer Also Available.

PRICED TO SELL

TEXCRETE COMPANY
P. O. Box 478 Pharr, Texas

FOR SALE

Big Bargain

1 New 36 cubic ft. concrete Mixer, Motor driven, Weigher and Batcher
2 New 25 ft. Bucket lifts, Motor driven. Now installed complete with chutes, guards.
Terms to right buyer.

WILLIAM S. HAMMOND
BOX 1160 WACO, TEXAS

PLAIN STEEL PALLETS

Flat • Square • Accurate
Guaranteed Quality

J & S Steel Corp.

4415 W. FILLMORE ST.
CHICAGO 24, ILL.
Phone Van Buren 6-9000

BESSER FOR SALE

Besser Super Vibrapac 3 at a time plain pallet machine in good running condition. Offbearing hoist motors and pallets included. No mold boxes.

PEERLESS BLOCK CO.
BOX 8398 SO. CHARLESTON, W. VA.
PHONE RI—43-424

FOR SALE

GO-CORP, JR. with racks and pallets for making

3500	4"
3000	8"
1800	10"

Machine in excellent operating condition.

DECATUR MATERIALS, INC.
MATERIALS FOR CONSTRUCTION
P.O. BOX 287 GREENSBURG, IND.

For Best Results

Advertise in

The Concrete Manufacturer's

Classified Section

FOR SALE

1—GOCorp Prince 2X Block Machine, including automatic front Pallet feed, complete with 4", 6", 8", 10", 12", 8" Header, Chimney, Patio and Brick attachments. Also parts for making fitting units and specials. All in good condition and attractively priced.

HILDOM CINDER BLOCK CO.
Jamestown, New York

SWAP — SELL — BUY

BLOCK MACHINES

Stearns #7 & 9 Jolcretes (Jolcrete owners at this price buy one for spare parts.)	$ 500.00 each
Mold Boxes #7 & 9	150.00 each
2—Stearns Stripper Clipper Machines	350.00 each
1—Y-40 Truckman Fork-Lift 4000 lb. Capacity	3500.00
1—25 cu. yd. Single Bin Hopper	1500.00
2—Air Offbearers Stearns #7 & 9	250.00 each
2—Hand Lift Trucks	175.00 each
2—Stearns 12-cu. ft. mixers. Excellent condition	450.00 each
100—Racks for cored steel pallets	10.00 each
100,000 pressed steel pallets in stock (Send tracing or sample for quotation).	

WRITE • WIRE • PHONE
Mr. McCaughey

Send in list of equipment you need. If we don't have it in stock, we usually know where we can find it at a bargain.

GENERAL ENGINES CO., INC.
Route 130 Thorofare, N.J.
Phone: Tilden 5-5400

FOR SALE

1 #7 Jolcrete w/ 4-8-12" mold boxes, 8" New All pallets Modular—2190 4" @ .15; 2700 8" @ .20; 1200 12" @ .30; 425 4" solid @ .25; 4" solid attachments

1 25 ft. bucket elevator w/2 HP motor; Multiplex Chimney Block Machine, 191 pallets, 2 Cap Forms, 20 sets of thimbles Shepard Hand Lift Truck w/new lift; Assorted parts for Jolcrete

MARIS L. HACKMAN
1815 WILLOW ST. PIKE LANCASTER, PA.

FOR SALE

2—Rex 3 yard HI-Discharge mixers mounted on 1950 F800 Ford Hendrickson Tamden chassis. 10.00 x 20 14 ply tires. Trucks, Mixers and Tires in very good shape and very clean. Priced for quick sale.

MOLASCHI REDI-MIX
1798 PLAINFIELD ROAD JOLIET, ILL.
Phone: 6-2449

LAMBCO #64 CONCRETE CURE

A thoroughly tested and proven membrane curing agent. Conforms to all Federal, State, County and City specifications. White, Clear or Black. Price lists and data on request.

LAMBERT CORPORATION
HOUSTON, TEXAS · ORLANDO, FLA.

GERSON'S GOOD WILL BUILDERS

ADVERTISING NECESSITIES FOR THE BLOCK INDUSTRY, LINE PINS, TWIGS, CORNER BLOCKS, CALCULATORS ETC.

Complete Catalog on Request.

GERSON CO.
97 Deering Rd.
Mattapan, Mass.

CONCRETE BLOCK MACHINE FACTORY RECONDITIONED

FMC-180, plain pallet block machine, guaranteed. Comes complete with motors and mold box. Capacity 1400 blocks daily. $2750.00. Financing available.

FLEMING MANUFACTURING CO.
CUBA, MISSOURI

FOR SALE

Block plant located near Phila. area can be bought as package unit or equipment can be purchased separately.

1 Besser Vibrapac complete with magnetic offbearer and pallet return.
1,000 Plain Pallets 18⅛ x 26 x ⅞.
4", 8" 12", Mold Boxes.
50 Steel Racks 72 Block capacity.
1 Praschak 30 cu. ft. mixer and skip loader with 20 H.P. motor.
1 Kewanee 50 H.P. Low Pressure horizontal boiler.
1 Hyster fork truck, 4,000 lbs. capacity.
1 Yale electric platform truck with charger, 4,000 capacity.
1 Scoopmobile front end loader, 1 yd. capacity.

CALN BLOCK COMPANY
2471 WAYNE AVE. COATESVILLE, PA.
PHONE 2880

FOR SALE

Commercial Dunbrik Machine, excellent condition, with 2750 pallets. Machine and pallets like new. Priced for quick sale.

TRENTON DUNBRIK CORPORATION
1685 Nottingham Way Trenton 9, N. J.
JUniper 7-6091

PUMICE

Ideal for split rock and standard block. 8" block has "U" factor below .30 BTU per sq. ft. per hr. cores unfilled. Grade ⅜" to fine $1.75 per cu. yd., mine run $1.50, FOB cars Domingo, N.M. Freight rates on request. Produced by block manufacturers.

LAVA PUMICE, INC.
P.O. Box 387 Albuquerque, N. M.

FOR SALE

1—Marvel Drain tile machine, 4", 6", & 8" attachments. Less than 1000 units produced. Complete with motor $450.00.

EINUNG CONCRETE PRODUCTS
Wisner, Nebraska

For Best Results Advertise

in

THE CONCRETE MANUFACTURER'S CLASSIFIED SECTION

METAL MOLDS & VIBRO—TABLES

PARK BENCHES

Splash-Blocks • Step Treads
Window Wells • Dist. Boxes
Chimney Caps • Wall Cap
Lawn Trim • Stepping Stones

Special Molds Made to Order!

Write Today . . . **SPILLMAN MFG. CO.**
Box 534, Station G
Columbus, Ohio

Plant Design Layout Machinery Block

WITTEMANN MACHINERY COMPANY

FARMINGDALE, NEW JERSEY

Specialists in Concrete Products Equipment

Eastern Representatives of the
COLUMBIA MACHINE WORKS, Vancouver, Washington

Elevators Bins Conveyors Feeders

MINERAL COLORS

for

BRICK MORTAR STUCCO-PLASTER-CONCRETE

"Fine Because of Their Fineness"
Ask for samples and recommendations.
BLUE RIDGE TALC CO., INC.
HENRY, VIRGINIA

PALLETS

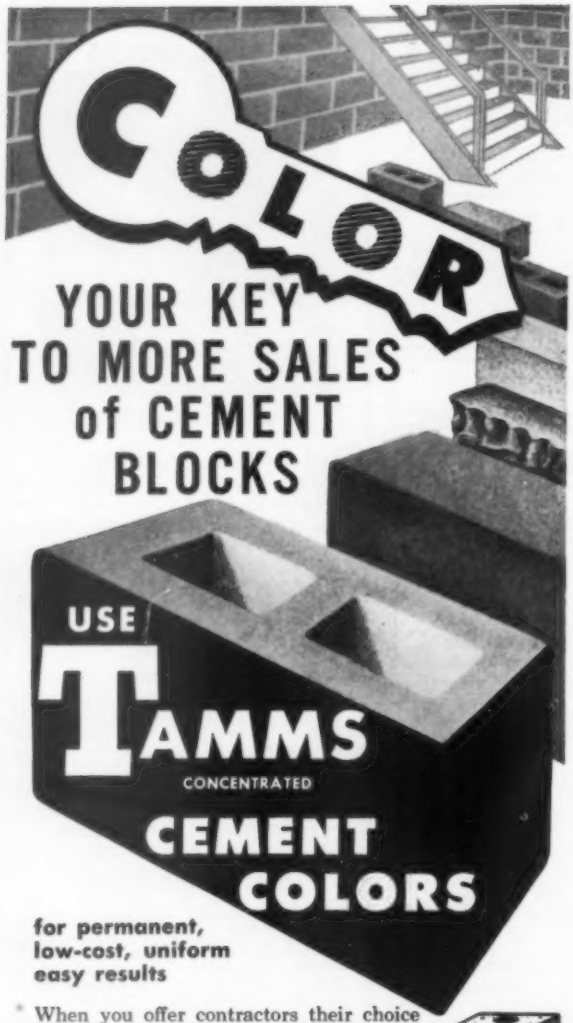
Guaranteed Quality

PLAIN STEEL PALLETS

FLAT • SQUARE • ACCURATE

Inquiries invited

GARY STEEL SUPPLY CO.
2300 S. Springfield Ave.
CRawford 7-2525 Chicago 23, Ill.



for permanent, low-cost, uniform easy results

When you offer contractors their choice of *COLORED* CEMENT BLOCKS or split block in colorful "quarried stone" effects, you offer them *easier* sales, because today's homemakers *want color!* And contractors as well as your "do-it-yourself" trade are quick to see the advantage in *COLORED* cement units that need no finishing, save costly days of time and labor.

24 BEAUTIFUL COLORS

No change in mixing procedures. Just add TAMMS CEMENT COLOR. No guesswork! From six to nine pounds per sack of cement produces deep-shade, non-fading uniform colors every time! And the few pennies per sack of cement adds many dollars' worth of easy, extra volume for you.

SEND THE COUPON for *profit-details* NOW!

TAMMS INDUSTRIES, INC.
228 N. La Salle St. Chicago 1, Ill.

RUSH US — FREE COLOR CARDS for Tamms Cement Colors, complete information on use and prices.

Firm Name_____

Address_____

City_____ Zone____ State_____

Individual's Name_____ Title_____

Concrete Manufacturer

INDEX TO ADVERTISERS

A A Wire Products Co. 359
Adrian Peerless, Inc. 379
American Clay Machinery Division, Huber-Warco Co. 382

Baker-Raulang Co. 299
*Barber-Greene Co. 339
*Besser Co. 302, 345, 369, 373
*Bin-Dicator Co. 338
*Butler Bin Co. 316

Cardinal Scale Mfg. Co. 370
Carpenter Mfg. Co. 379
Chain Belt Co. 357
Chase Foundry & Mfg. Co. 371
Classified Section 375-377
Cleaver-Brooks Co. 307
Columbia Machine Works 331
Columbia Southern Chemical Corp. 381
*Construction Machinery Co. 318
Cook Bros. Equipment Co. 347

Des Moines Glove & Mfg. Co. 369
Dow Chemical Co. 333
Dunn Mfg. Co., W. E. 361
Dur-O-wal 300

Economy Forms Corp. 370
Edmont Manufacturing Co. 373
Engineered Equipment, Inc. 380
Erickson Power Lift Trucks, Inc. 367

*Food Machinery & Chemical Corp. 317
Forrer's Division, Spray-O-Bond Co. 371, 374
Four Wheel Drive Auto Co. 355

General Engines Co. 377
GO Corp. 351
Griffin Corp., Larry 360
Gwynne, Inc., J. H. 369

Huber-Warco Co. 382
*Hyster Co. 372

Irvington Form & Tank Corp. 360

***See also Detailed Information in 1956 Pit and Quarry HANDBOOK and CONCRETE INDUSTRIES YEARBOOK**

WAL-LOK

MORTAR JOINT REINFORCING

1ST

WITH ARCHITECTS and BUILDERS because WAL-LOK was first . . .

- to use research for product improvement.
- to deform without impairing tensile strength.
- to use projecting Cross Bars — 4 mortar locks at every weld.
- to comply with National Bureau of Standards Recommendations.
- to furnish galvanized Cross Bars.
- to furnish 12' lengths in 300' bundles — fewer splices, less scrap, lower cost.
- to manufacture 8 Gauge Super Standard.
- to insure complete mortar bondage.

WAL-LOK IS A NECESSITY

- to minimize shrinkage cracks.
- to withstand side pressure.
- to increase wall strength.
- to reduce cracks caused by foundation failures.

YOUR CHOICE: 1. Bright basic Side Rods with galvanized Cross Bars 2. Fabricated from galvanized wire 3. Galvanized after fabrication.

Make WAL-LOK first on your list. Write today for descriptive brochure packed with facts.

WAL-LOK

ADRIAN PEERLESS, INC.
1480 E. Michigan Adrian, Mich.

HANDLE MORE BLOCKS PER PAIR

NO SEAM TO RIP OUT
One piece palm and thumb construction multiplies glove life.

EXTRA COATED AT WEAR POINT
Heavy vinyl palm coating extends wearing life . . . builds comfort cushion, too.

PROVED more wear per pair

SURETY TRIPL-PALM

Putting the wear in gloves at the right point really makes a big improvement in service — and makes important reductions in glove costs. Tripl-Palms are built tough for rough use yet provide thorough hand comfort. Available in knit wrist and gauntlet styles with coated or "free-breathing" backs.

Use this Free Offer to Prove Tripl-Palm's Longer Wearing Life

TEST FOR YOURSELF AT OUR EXPENSE— Tell us about your requirements (specific material to which gloves are subjected) and we'll send you a pair of Sureseals for your own test.

THE SURETY RUBBER CO., Carrollton, Ohio

CLIP COUPON AND MAIL TODAY

Gentlemen:
We'll test Tripl-Palms. Send complete information promptly.

Your Name _____

Company Name _____

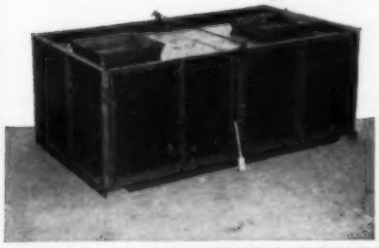
Address _____

City _____ State _____

Gloves are used for (name type of job) _____

Your Glove Jobber's name _____

FIRST IN THE FIELD
for Speed and Economy in making
QUALITY SEPTIC TANKS



CARPENTER Forms and Handling Equipment insure faster setting up, stripping, resetting and pouring. Time and labor costs cut to minimum. ONE MAN handles our Deliver Rig. Satisfied customers across the entire U.S.A.

Write for Details

CARPENTER MFG. CO.
Phone 2-8938
Harvie Road Carrier 94
Box 470, Richmond 23, Va.

NOW MORE THAN **150** *LICENSED MANUFACTURERS Producing*

Patented

homeward®
Concrete STEPS

A Small Investment That Pays Big Dividends

Homeward all metal forms are precision built to produce a product that requires no hand finishing.

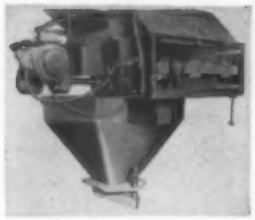
The exclusive franchise for your territory may still be open.

For Complete Information Write

ROGER F. WILLIAMS, Licensor
3420 S. W. 9th St. Des Moines (15), Ia.

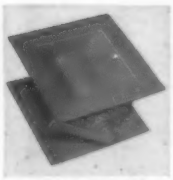
® homeward is a Registered TRADE MARK

LET US HELP SOLVE YOUR MATERIALS STORAGE and BATCHING PROBLEMS WITH THESE ACCESSORIES

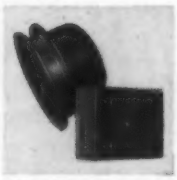


MATERIAL BATCHERS and BATCHING BINS

Single or multiple material batching in any size for your specific requirements.



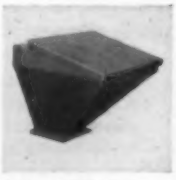
PLUG VALVES and VANE FEEDERS
For positive flow and control of cement.



BIN INDICATORS and SIGNAL BOX
For "HI-LO" level indications of cement storage.

AGGREGATE GATES OF ALL TYPES
For unloading hoppers, belt charging and feed metering.

CEMENT AERATION ASSEMBLIES
To assure smooth and continous flow of cement.



CEMENT and AGGREGATE RECEIVING HOPPERS
All sizes for rail and truck unloading and rehandling.

2 and 3-WAY CEMENT VALVES
To allow for additional cement storage.

✓CHECK THESE ADDITIONAL ITEMS

- COMPLETE BATCHING PLANTS
- AUTOMATIC BATCHING EQUIPMENT
- CEMENT SILOS • BELT FEEDERS
- BUCKET ELEVATORS • SCREW CONVEYORS
- TUNNEL GATES, WATER BATCHERS & METERS

WRITE FOR COMPLETE INFORMATION

"E/E" engineers will gladly assist you, at no charge, of course, in solving equipment problems in your plant. Listed are major items, but we will design and manufacture any aggregate or cement equipment you specify.

ENGINEERED EQUIPMENT, INC. Waterloo, Iowa

Kent Machine Co. 305
Kirk & Blum Mfg. Co. 348

LEAP Concrete, Inc. 310
Lone Star Cement Corp. 298

Marsh Engineering Co., E. F. 306
Medusa Portland Cement Co. 325
Memphis Equipment Co. 368
Monarch Road Machinery Co. 314
Moore Dry Kiln Co. 371
Motorola Communications & Electronics, Inc. 311

National Conveyor & Supply Co. 312
National Wire Cloth Co. 362
Noble Company 308-309
Norwalk Vault Co. 373

Olsen Corp., Gene 351
Oswalt Engrg. Service Corp. 374

Pioneer Rubber Co. 367
Portland Cement Assn. 349
Praschak Machine Co. 342
PreCaster, Inc. 321
Presto Brick Machine Corp. 362

Quinn Wire & Iron Works 332

*Radio Corporation of America 353
Reichard-Coulston, Inc. 349
Reo Motors, Inc. 364-365

Sarasota Engineering Co., Inc. 343
Side-O-Matic Unloader Corp. 315
*Smith Co., T. L. 337
Spillman Co., R. L. 377
Standard Dry Kiln Co. 367
*Stearns Manufacturing Co. 384
Surety Rubber Co. 379

Tamms Industries, Inc. 378
Towmotor Corporation 313
Trinity Div., General Portland Cement Co. 363
Truck-Man Division, Knickerbocker Co. 362
Truck Mixer Manufacturers Bureau 323
*Twin City Iron & Wire Co. 373

Unit Step Form Co. 368

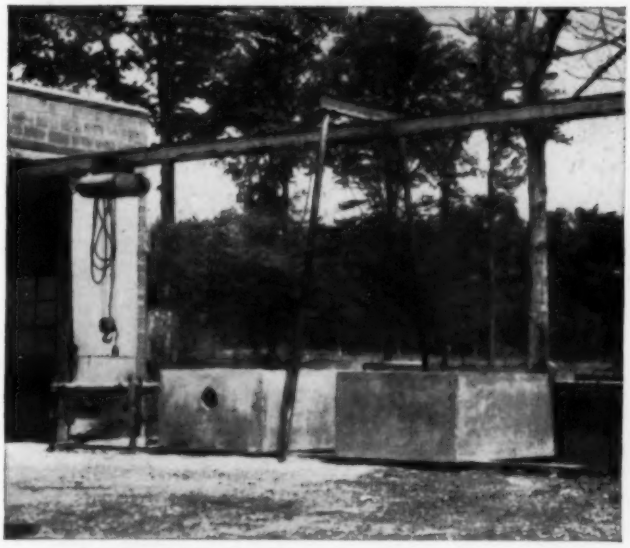
Westinghouse Transit Mixer Division, LeTourneau-Westinghouse Co. 383
Williams, Roger F. 379

*See also Detailed Information in 1956 Pit and Quarry HANDBOOK and CONCRETE INDUSTRIES YEARBOOK.

Don't worry about chilly nights when your concrete is treated with COLUMBIA CALCIUM CHLORIDE

CONCRETE PRODUCTS STILL SET FASTER

Make sure that Columbia Calcium Chloride is added to the mix you work with. It upgrades your product quality and cuts manufacturing costs. Pre-cast units, block, or pipe... Columbia Calcium Chloride reduces pre-steam holding time, steaming time, and the soaking period—yet curing is faster and more dependable. There's far less cracking during early handling. And your products have higher ultimate strength. You make earlier deliveries, save space on lower inventory. If your present mix *doesn't* contain Columbia Calcium Chloride, better order some right away.



Columbia Calcium Chloride works equally well in concrete made with normal, air entrained, or high early cements.

NO LAG IN READY MIX SET

Night temperatures lower than 70°F may make your customers turn up their collars, but the chill doesn't slow their jobs when you've treated your ready mix with Columbia Calcium Chloride. Treated concrete sets and strengthens much faster at lower temperatures than you'd ever expect, due to Columbia Calcium Chloride's unique action. Your customers' time-tight jobs benefit because this improved mix gives both initial and final set *three times as fast* as untreated ready mix. And how about this: early strength is 50% greater at 72 hours; ultimate strength tests higher, too. All this means earlier form removal, faster finishing, quicker job wind-up. Have *your* customers been getting these money-saving advantages?

You can add Columbia Calcium Chloride very economically, either at your plant or at customers' job sites.

WRITE TODAY FOR COMPLETE INFORMATION . . . PLEASE MENTION WHETHER INTERESTED IN READY MIX OR CONCRETE PRODUCTS

COLUMBIA-SOUTHERN CHEMICAL CORPORATION
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY
ONE GATEWAY CENTER · PITTSBURGH 22 · PENNSYLVANIA

DISTRICT OFFICES: Cincinnati • Charlotte • Chicago Cleveland • Boston • New York • St. Louis • Minneapolis New Orleans • Dallas • Houston • Pittsburgh • Philadelphia San Francisco

IN CANADA: Standard Chemical Limited and its Commercial Chemicals Division

"Our American No. 9 Cinder Grinder Is Saving Us $300 - $400 a Month in Maintenance Alone..."

Says President of Cincinnati Trucking and Block Company

Phone WAbash 6406

J. M. RADEL TRUCKING, Inc.

F. U. C. O. 6678-1

4308 DELHI PIKE - CINCINNATI 38, OHIO

American Clay Machinery Division
Huber-Warco Company
Marion, Ohio

Gentlemen:

This is just a note to let you know how pleased we are with the performance of our American No. 9 grinder in our cinder operation.

I think these facts tell the story . . .

The No. 9 replaced two roll crushers and a double deck vibrating screen. As a result, our American No. 9 cinder grinder is saving us $300 to $400 a month in maintenance costs alone. Also, the No. 9 has reduced our electric power consumption by 50 horsepower and released one man for work elsewhere in our organization.

Performance of the No. 9 has been better than you said it was. We reduced course cinders (3 to 4 inches in diameter) down to 3/8-inch and the No. 9 is handling 250-300 yards per 9-hour day. That's more than your advertised capacity of 30 yards per hour. And, of course, we use the material as it comes from the grinder -- it doesn't need screening.

Needless to say, we're sold on the No. 9.

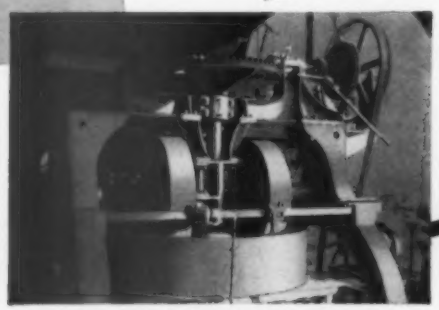
Very truly yours,

J. M. RADEL TRUCKING, INC.

J. M. Radel

J. M. Radel, President

J. M. Radel, President



The American No. 9 in operation at J. M. Radel Trucking, Inc. in Cincinnati.

For grinding cinders, haydite, pumice, slag, and quarry and mine products, American offers a complete range of grinders in eight sizes, with capacities from 15 to 80 tons per hour.

For a non-obligating consultation on your grinding problems . . .
Write . . . Wire . . . or Phone

American CLAY MACHINERY

A Division of HUBER-WARCO Company
Marion, Ohio, U. S. A.

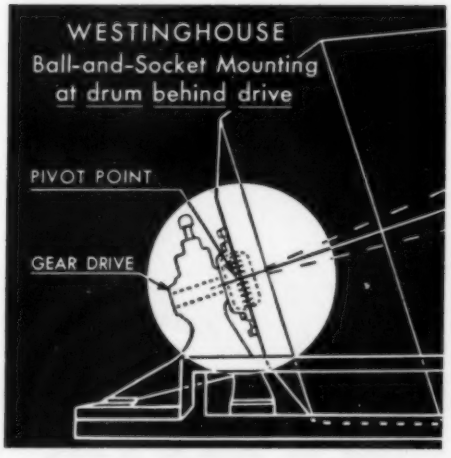
PLANTS IN MARION AND BUCYRUS, OHIO • CABLE ADDRESS: HUBARCO
CLAY MACHINERY • GRINDERS • ROAD ROLLERS • MOTOR GRADERS • MAINTAINERS

How to reduce mixer maintenance costs

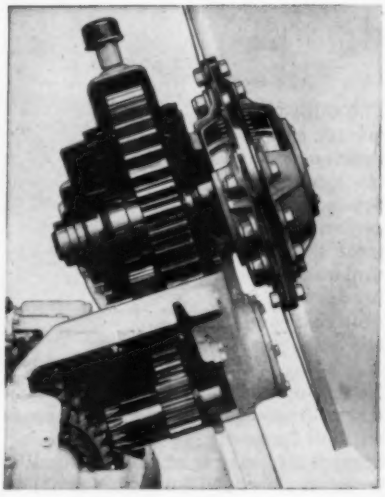
The Westinghouse Transit Mixer pictured is pouring on a large septic tank project in Pennsylvania. You can imagine the rough ground over which it traveled to get to this spot—the uneven ground on which it stands while discharging its load. If that were any other mixer (with chain or pinion and ring gear drive) the driving mechanism would be subjected to severe stresses and wear because of frame weaving and twist but not so with Westinghouse.

Westinghouse has it over other mixers in these two important respects—1, the driving mechanism consists of fully-enclosed gears which suffer no more wear and need no more attention than a conventional auto transmission—2, a large geared ball-and-socket drum mounting completes the drive and absorbs all drum misalignment allowing none to get to the driving gears. These patented features vastly reduce maintenance costs as compared to other mixers.

These Westinghouse advantages and others are fully illustrated and described in a new 1957 catalog. Before you buy another mixer get your copy from your local distributor or write Westinghouse.



Because the drum mounting is *behind* the drum drive no misalignment (suggested by dotted lines in sketch) is transmitted to solidly mounted drum drive gears.



Cut-away view of the exclusive Westinghouse enclosed-gear drum drive and geared ball-and-socket drum mounting.

TRANSIT WESTINGHOUSE MIXER

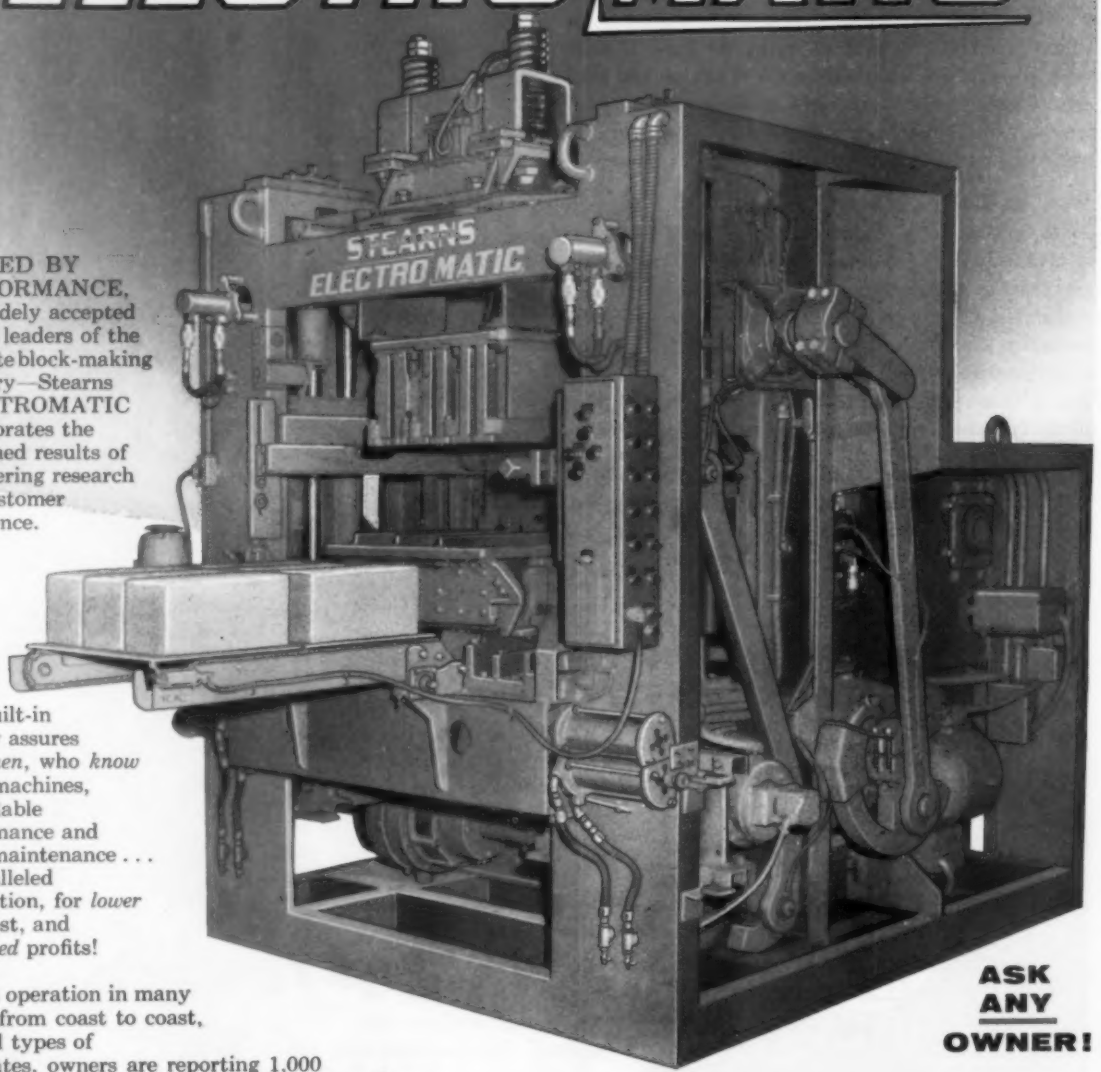
WESTINGHOUSE TRANSIT MIXER DIVISION
LeTourneau-Westinghouse Company, Indianapolis 6, Indiana
Member of National Ready Mixed Concrete Association

Proved by Performance!

...preferred by leaders!

THE STEARNS

ELECTRO MATIC



PROVED BY PERFORMANCE, and widely accepted by the leaders of the concrete block-making industry—Stearns ELECTROMATIC incorporates the combined results of engineering research *and* customer preference.

The built-in quality assures *these men*, who *know* block machines, dependable performance and lower maintenance . . . unparalleled production, for *lower* unit cost, and *increased* profits!

Now in operation in many states, from coast to coast, with all types of aggregates, owners are reporting 1,000 to 1,100 (8 x 8 x 16 or equivalent) units per hour. Write today for full particulars and the installation nearest to you!

ASK ANY OWNER!

STEARNS

MANUFACTURING COMPANY • INC.

ADRIAN • MICHIGAN • U.S.A.

COMPLETE CONCRETE PRODUCTS PLANT EQUIPMENT

Advertising rate per issue:

$10.50 per column inch. Lower rates for larger space used and/or on a contract basis.

Write for rate card.

Closing date:

20th of month preceding date of publication.

PIT & QUARRY
431 S. Dearborn St. Chicago 5, Ill.

BROADCAST

Section

CHIEF ENGINEER

Leading Company in Materials Handling Field has a challenging opening for a top-flight Aggregate Plant Designer. Must be familiar with plant layout, equipment selection and steel design. Job location in New York area.

- Salary open
- Exceptional Employee Benefit Plan
- A future with a good present

Send resume including salary requirements to:

BOX PQ-1053 c/o PIT & QUARRY PUBLICATIONS
431 S. Dearborn St. Chicago 5, Ill.

MECHANICAL ENGINEER

Position Open

By large cement company with opportunity for training and advancement. Write giving complete details of education, experience and salary desired. Confidential.

Box 1212, c/o PIT & QUARRY PUBLICATIONS
431 S. Dearborn St. Chicago 5, Ill.

WANTED

A midwest portland cement company wants a young chemist or chemical engineer for general technical work on kilns and quality control. No experience necessary. Write giving personal data. Replies confidential.

BOX PQ-3013, c/o PIT & QUARRY PUBLICATIONS
431 S. Dearborn St. Chicago 5, Ill.

Engineers! Careers in Supervisory Positions

IN ONE OF AMERICA'S FASTEST GROWING INDUSTRIES

As a result of its current 50% expansion program, a large cement producer has challenging careers awaiting engineers with supervisory experience. If you seek a larger, more important challenge—and certain employee advantages over and above customary benefits such as good pay, pension plan, life and hospital insurance—apply for one of the following openings available at our expanded facilities in Pennsylvania, Ohio and Illinois.

MAINTENANCE ENGINEERS—Exceptional career growth opportunity for men approximately 30 to 40 with engineering degree or practical operating experience.

ENGINEERS—Excellent opportunity for young men to get in on ground floor in cement mill constructions and operation. Practical experience desirable.

QUALITY TECHNICIANS—Outstanding opportunities for men up to 35 interested in laboratory work followed by advancement to either Plant Control Chemist or Technical Service Engineer.

Write today giving full details of training and experience to:

Box PQ-3133, c/o PIT & QUARRY PUBLICATIONS
431 S. Dearborn St. Chicago 5, Ill.

Assayers
Consultants
Designers

Professional Services

Engineers
Geologists
Technicians

CORE DRILLING
ANYWHERE
We look into the earth
PENNSYLVANIA
DRILLING COMPANY
PITTSBURGH 20, PA.

JOHN F. MEISSNER ENGINEERS INC.
CONSULTING & DESIGNING ENGINEERS
BULK MATERIALS HANDLING
SPECIALISTS IN DESIGN OF CRUSHED STONE, SAND, GRAVEL AND READY MIX PLANTS
308 W. WASHINGTON • CHICAGO 6, ILL.

FOUNDATION TESTING, CHEMICAL ANALYSIS
CORE DRILLING
Thomasville Drilling & Testing Co.
THOMASVILLE, PENNA.

JOHNSON SOILS ENGINEERING LABORATORY
Foundation Design—High & Airport Pavements—Construction Control—Load Tests—Shear & Consolidation Tests—MOBILE LABORATORIES.
193 West Shore Ave. Bogota, N. J.
Bogota-Hubbard 7-4408

REFER TO THIS SECTION WHENEVER YOU NEED PROFESSIONAL ADVICE IN YOUR FIELD.

Quarries
Crushing Plants
Cement Plants
Storage Methods
Operating Costs

E. Lee Heidenreich, Jr.
Consulting Engineer
75 Second St.
Newburgh, N. Y.
Phone: 1828
9 South Clinton St.
Chicago 6, Ill.
Ph. FR 2-4186

Construction
Design
Operation
Plant Layout
Appraisals

FOR SALE

75' x 10" Enclosed Elevator.
10" Enclosed Elevator, belt.
8" Enclosed Bucket Elevator.
6" Enclosed Bucket Elevator.
40' x 12" Screw Conveyor.
30' x 9" Screw Conveyor.
35 Cu. Yd. Jeffrey Bin.
#4 Jeffrey Vibrating Feeders.
Acme 14" x 26" Jaw Crusher.
Acme 9" x 16" Jaw Crusher.
Champion 12" x 26" Jaw Crusher.
Climax 10x20" Jaw Crusher, new jaws.
Dodge Lever Type Jaw Crusher 9" x 15".
Pennsylvania SXT-14 Hammermills, with 450 H.P. GE Motors (2 available).
Revolv. Screen 48" x 20', trunnions.
Seco Screen, 4' x 8', double deck.
Seco Screen, 4' x 14', triple deck.
Eriez. Perm. Magnetic Pulley 20" x 20".
Misc. Size Large Conveyor Pulleys.
New Idlers, 18" and 24".
Trough Idlers, antifriction, 48" & 42".
36" Trough Idlers, 5 roll type (69)
15 Ton Stiffleg Derrick, 110' Boom.
Wright 8 ton Chain Hoist.
Telsmith Sand Rewasher 28" x 12'.
Westinghouse Flexarc Portable gas driven Welder on Pneumatics.
Small Gasoline Water Pumps.
700 KW Generator Set, Diesel.
350 KW Generator Set, Diesel.
84 KW Generator Set, Diesel.

WANTED

Gearmotors 3 to 15 H.P.
Jaw Crushers, all sizes.
Late Model Vibrating Screens.
Good used 18" & 24" Trough Idlers any amount.

G. A. UNVERZAGT & SONS INC.
136 Coit St. Irvington 11, N. J.

EXECUTIVE SALES MANAGER

Experienced Sales Manager required by an important company in Western Canada. To be responsible for developing and building up a substantial market. Must have a satisfactory educational background and management level experience in sales relating to the cement industry or similar industries —Age 35 to 45—Definitely attractive position requiring a reliable man. Applications will be dealt with in strict confidence.

P. O. Box No. 774 Calgary, or 681 Vancouver

POSITION WANTED EXPANDED SHALE

Seeking management, sales or engineering position. Available due to sale of business. Broad experience in plant design, construction, operation, and sales. Willing and able to handle any or all phases of design, construction, or operation of expanded shale plant. Age 40, married, three children. Grad El. Engrg. and Bus. Adm.

Box PQ-3123, c/o PIT & QUARRY PUBLICATIONS
431 S. Dearborn St. Chicago 5, Ill.

FOR SALE

Complete crushing plant, acreage, trucks, etc. R. R. spur. Limestone meets all specs. Handling phosphate, redimix. No competition. Missouri.

Box PQ-3103, c/o PIT & QUARRY PUBLICATIONS
431 S. Dearborn St. Chicago 5, Ill.

QUARTZITE QUARRY FOR SALE

156 acres of an unlimited deposit of a high grade, highly refractory quartzite with an additional 11 acres of tracksite property, located in the South Central part of Wisconsin. Quarry fully developed and ready for operation. Have market for good size tonnage for all year round shipments. Here is a real opportunity for a capable party who has the necessary equipment for crushing and screening.

BOX PQ-3063, c/o PIT & QUARRY PUBLICATIONS
431 S. Dearborn St. Chicago 5, Ill.

JAW CRUSHERS—6" x 3" to 60" x 48"

Before buying or selling any
FARREL-BACON JAW CRUSHERS
It will pay you to consult

BACON-PIETSCH Co., Inc.
Engineers & Manufacturers Send for Catalogue
Montclair, N. J.
22 Park Street

Machine Shop Facilities
FEEDERS
Conveyors, Screens, etc.

FOR SALE OR RENT

Derricks

1—Unused 25-ton Wiley Model E Steel Stiffleg for hook work. 60' boom, 12' bullwheel, rated 25 ton @ 38' or 10 ton " 50'. Wt. 26,000#.

1—20-ton American Model 836 Steel Stiffleg #195016. 50' boom, 12' bullwheel. Rated 26,000# @ 48'.

1—American Terry Model 1-75 Steel Erectors Guy Derrick, 85' mast, 75' boom. Rated 15-ton @ 30' radius.

Generator

1—100 KW Ideal AC Diesel Generator, 127/220/230/400/440 volt, 50 or 60 cyc., 3 ph. Equipped with Hercules DNX 6 diesel eng. #1051082. On steel skids. Wt. 16,170#.

Hoists

1—76 HP Clyde Frame 5 three-drum diesel with attached swinger. Rated 8000# 250 FPM. With Int'l diesel eng. Wt. 11,500#.

1—100 HP 3-drum American Model 100-3D diesel with attached swinger. Rated 10,000# @ 240 FPM. With 100 HP Caterpillar diesel eng. Model D8800 with 2-cyl. gas. starting engine. Wt. 19,275#.

Locomotives

4—8-ton Standard Gauge: 3 Brookville, 1 Plymouth.

2—10-ton Plymouth Standard Gauge Diesel Model BFA.

Write for New Stock List No. 456

EQUIPMENT CORPORATION OF AMERICA
CLIFTON HEIGHTS, PA., Box P-606, Sub. of Phila. MAdison 6-2290
GROVETON, PA., Box 43-P, Sub. of Pittsb. FEderal 1-3000
CHICAGO 4, ILL., 327-P So. LaSalle St. WAbash 2-4881
NEW YORK 7, N.Y., 30-P Church St. WOrth 2-0030

POSITION WANTED

Quarry Superintendent. Age 43. Married. 20 years experience, Quarry Supervision. Available at once. Reply:

Box PQ-3093, c/o PIT & QUARRY PUBLICATIONS
431 S. Dearborn St. Chicago 5, Ill.

Large Aggregate Producer Wants to Buy Or Lease Excellent

SAND & GRAVEL DEPOSITS

Presently Operating Twenty Plants

PQ-3023, c/o PIT & QUARRY PUBLICATIONS
431 S. Dearborn St. Chicago 5, Ill.

FOR SALE EUCLID REAR DUMP TRUCKS

Bucyrus-Erie Draglines, 2½ yd. to 8 yd.
Bucyrus-Erie Shovels, ¾ yd. to 8 yd.
Northwest Draglines, ¾ yd. to 2½ yd.
Northwest Shovels, ¾ yd. to 2½ yd.
Manitowoc Draglines, 2½ yd. to 5 yd.
Manitowoc Shovels, 2½ yd. to 5 yd.
Marion Shovels & Drags, 4 yd. to 9 yd.
Lima Shovels & Drags, 1½ yd. to 6 yd.
Osgood Shovels & Drags, 1½ yd. to 2½ yd.
Caterpillar Graders & Dozers.
Hi-Lift Shovels.
P&H Truck Mtd. Crane & Hoe, ⅜ yd.
2400 Lima Shovel front attachment.
4500 Manitowoc Shovel front attachment.
6" and 9" Drills, Diesel and Electric

other equipment available not listed above.

WILLIAM LUBRECHT, III
Construction Equipment
311 W. Diamond Ave. - Hazleton, Pa.
Phone: Gladstone 5-4841 or 5-9538

BONDED EQUIPMENT BARGAINS

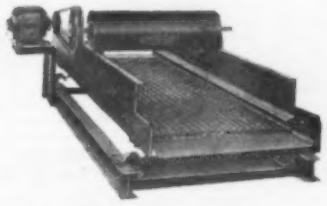
IMMEDIATE SHIPMENT FROM OUR FACTORY - WRITE, WIRE OR PHONE

NEW BONDED® HEAVY DUTY VIBRATING SCREENS

HEAVY DUTY MODELS, TYPE BS: Four bearing positive throw eccentric shaft; 3' x 6' to 5' x 14', 1 to 5 decks. Write for New 8-page Bulletin No. 1087.

Model Number	No. of Decks	Screening Area	Sale Price
124AS	1	2'x4'	$ 443.00
224AS	2	2'x4'	472.00
126AS	1	2'x6'	472.00
226AS	2	2'x6'	501.00
136AS	1	3'x6'	581.00
236AS	2	3'x6'	688.00
336AS	3	3'x6'	956.00
138AS	1	3'x8'	675.00
238AS	2	3'x8'	815.00
338AS	3	3'x8'	996.00
336BS	3	3'x6'	1303.00
436BS	4	3'x6'	1447.00
138BS	1	3'x8'	1231.00
238BS	2	3'x8'	1282.00
338BS	3	3'x8'	1375.00
248BS	2	4'x8'	1865.00
348BS	3	4'x8'	2035.00
2410BS	2	4'x10'	1953.00
3410BS	3	4'x10'	2305.00
2412BS	2	4'x12'	2319.00
3412BS	3	4'x12'	2635.00
4412BS	4	4'x12'	2833.00

NEW BONDED® GENERAL DUTY VIBRATING SCREENS



GENERAL DUTY SCREENS, TYPE AS: Eccentric weight mechanism, spring mounted, 1 to 3 decks, 2' x 4' to 3' x 8'. Write for New 8-page Bulletin No. 1086.

For mineral, chemical and other industrial products. Fast, efficient and economical for cleaning, sizing, grading, dewatering. Made in all metals, including stainless steel. Enclosed models for hot materials or dust control. Bonded screens are built for any screening operation, wet or dry.

NEW BONDED® TROUGHING IDLER CONVEYOR BARGAINS

Complete Ready-Fab sections quickly and easily joined together on the job. We take our loss on our stock of short length belting. You can save as much as 50% on the BONDED CONVEYOR SPECIALS listed, with conveyor belting in two pieces. Conveyors are equipped with 5" roll diam. idlers and return rolls, 20" diam. head pulley and 16" diam. tail pulley mounted on 2¼" or 2-7/16" diam. shaft. Belt is new 4-ply, 28-oz. duck, ⅛" top rubber cover x 1/32" bottom cover and is fresh stock made by leading manufacturers.

Remember, You Save Up To 50%

Conveyor Prices Include Belting

Belt Width	Length of Conveyor	List Price	Sale Price
14"	25'	$1397	$ 722
14"	50'	2222	1144
14"	85'	3377	1733
16"	20'	1262	636
16"	45'	2137	1088
16"	60'	2662	1359
16"	90'	3712	1900
18"	25'	1477	794
18"	45'	2217	1166
18"	70'	3142	1648
18"	85'	3697	1933
18"	100'	4252	2220
18"	130'	5362	2797
20"	25'	1517	828
20"	60'	2882	1533
20"	75'	3467	1838
20"	90'	4052	2145
24"	25'	1590	898
24"	45'	2430	1330
24"	70'	3480	1875
24"	100'	4740	2514
24"	120'	5580	2950
24"	150'	6840	3603
30"	50'	2911	1617
30"	70'	3871	2119
30"	90'	4831	2614
36"	25'	1818	1118
36"	45'	2858	1678
36"	60'	3638	2096
36"	100'	5718	3214

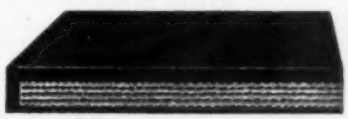
For conveyors longer or shorter than those listed above, add or deduct the following per foot prices according to belt width. Prices include belting. Write for Bulletin 1138.

For 14" belt	$16.84 per foot
For 16" belt	18.04 per foot
For 18" belt	19.24 per foot
For 20" belt	20.37 per foot
For 24" belt	21.78 per foot
For 30" belt	24.75 per foot
For 36" belt	27.95 per foot

BONDED TROUGHING IDLER CONVEYORS ARE ALSO AVAILABLE WITH TRUSS TYPE CONSTRUCTION. WRITE FOR DESCRIPTIVE INFORMATION AND PRICES.

NEW CONVEYOR BELTING SAVE UP TO 25%

Heavy duty 4-ply, 28 oz. duck ⅛" top rubber cover by 1/32" bottom cover 12# to 15# average friction pull; 800# to 1000# average cover tensile rubber belting having high tensile strength, tough cotton duck, strong carcass and proper flexibility. For heavy boxes, bags and bulk materials. Troughs easily. Famous brands at deep cut prices. Fresh stock.



Width	Ply	List Price	Sale Price
14"	4	$3.52 foot	$2.83 foot
16"	4	3.96 foot	2.97 foot
18"	4	4.38 foot	3.29 foot
20"	4	4.83 foot	3.80 foot
24"	4	5.68 foot	4.26 foot
30"	4	6.97 foot	5.21 foot
36"	4	8.26 foot	6.18 foot

A high grade of heavy duty 4 and 5-ply, 28 oz. duck, ⅛" top rubber cover x 1/32" bottom rubber cover, 16# to 19# average friction pull, 2500# to 3000# average cover tensile belting. This belt is for more severe service, high tonnages and abrasion resistance. For handling stone, mineral ores, concrete, cement, coal and other similar materials, both wet and dry. Belt has molded rubber edge.

Width	Ply	List Price	Sale Price
16"	4	$4.71 foot	$3.46 foot
18"	4	5.23 foot	3.83 foot
20"	4	5.73 foot	4.37 foot
24"	4	6.74 foot	4.94 foot
30"	4	8.28 foot	6.07 foot
24"	5	7.90 foot	5.78 foot

The following belts are 5-ply, 32 oz. duck:

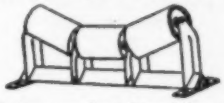
Width	Top Cover	Bottom Cover	List Price	Sale Price
24"	1/8"	1/16"	$ 8.56 foot	$ 6.42 foot
30"	1/8"	1/16"	10.52 foot	7.89 foot
36"	3/16"	1/16"	14.21 foot	10.66 foot

A heavier duty 28 oz. duck belt with ⅛" top rubber cover x 1/32" bottom rubber cover having 3500# to 4000# average cover tensile, 20# to 24# average friction pull. For the higher abrasion resistance applications and handling of materials where more strength is required to give greater belt life.

Width	Ply	List Price	Sale Price
18"	4	$5.67 foot	$4.20 foot
20"	4	6.22 foot	4.61 foot
24"	4	7.32 foot	5.41 foot
24"	5	8.53 foot	6.31 foot

Other widths, plies, duck weights and cover thicknesses available at low prices. Write for Free Sample.

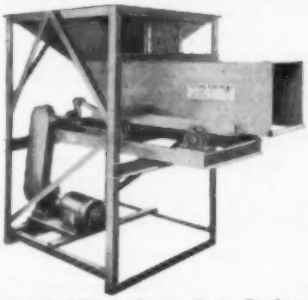
NEW IDLERS AND RETURN ROLLS 25% BELOW LIST PRICE



3-roll, 5" diameter Troughing Idlers for:			
14" belt	$18.50	24" belt	$21.25
16" belt	19.25	30" belt	22.00
18" belt	20.50	36" belt	22.75
20" belt	20.75	48" belt	25.50
1-roll, 5" diameter Return Idlers for:			
14" belt	$7.25	24" belt	$ 8.50
16" belt	7.50	30" belt	9.50
18" belt	8.00	36" belt	10.00
20" belt	8.25	48" belt	11.50

All steel. Interchangeable with other well known makes. Furnished with easily replaceable pre-lubricated sealed ball bearings. Also, can be furnished with greasable type Alemite Fitted bearings at slight additional cost. Maintenance is negligible. Bonded Rubber Disc Impact Idlers also available from $61.00. Write For Bulletin #1138.

NEW BONDED® FEEDERS



Bonded HDF-18 Heavy Duty Feeders were especially designed for abrasive materials such as Ore, Rock, Crushed Stone, Gravel, Sand, Clinkers, Abrasive Volcanic Ash and Rock. Abrasion Resistant Alloy Steel Plate is used for all parts that contact the material. Feeders are process control instruments as well as material movers and help to prevent screens, crushers, grinders, etc., from being run empty, choke fed, or overloaded. Capacities to 250 TPH. *Write for Bulletin #1182.*
Priced from $595.00

NEW BONDED BUCKET ELEVATORS

Bonded makes Open or Enclosed, Vertical or Inclined Bucket Elevators with continuous or spaced buckets mounted on chain or belting. They are recommended for small to medium size lumps, fine abrasive material such as dry sand, coke breeze, wet slag and many other bulk materials. Because of the wide variety of sizes and types, prices will be quoted on request. Write for Bulletin #1047.

BONDED SCALE AND MACHINE COMPANY

PHONE: HIckory 4-2186, Days
110 BELLVIEW

WRITE FOR FREE CATALOG AND PRICES
Mfrs. of Scales, Conveyors, Conveyor Parts, Idlers, Vibrating Screens, Crushers and Feeders

PHONE: AX. 1-2213, Evenings
COLUMBUS 7, OHIO

EQUIPMENT LOCATED
GA. - N. Y. - CALIF. - OHIO - TEXAS - ILL.

GRINDING MILLS

BALL MILLS—3'x4', 4'x8', 5'x8', 5'x8', 5'x10', 6'x5', 6'x7', 6'x8', 6'x10'.
HARDINGE MILLS—4'6"x16", 6'x14", 6'x22" 6'x36", 7'x22", 8'x36", 8'x48", 10'x48".
ROD MILLS—12"x24" LAB., 3'x10', 4'x8', 4'x9', 4'x14', 5'x8', 5'x10', 5'x14', 6'6"x14'6".
TUBE MILLS—5'x14', 5'x22', 5'6"x22', 6'6"x21'.
COMPEB MILL 7'x24'.

HAMMERMILLS

JEFFREY 36"x42", 42"x36", 42"x48", 42"x24".
PENNSYLVANIA—2-SXR-100 TPH-THOR SXT 13-48"x54".
UNIVERSAL—No. 4, 36"x26", 3240 IMPACTOR.
CEDAR RAPIDS—3033.
WILLIAMS—GA-60-44x60 FEED OPENING.

APRON FEEDERS

54"x10'3"—54"x16'—3'x12'.

FILTERS—SEPARATORS—CLASSIFIERS

OLIVER DRUM—8x10', 12'14', 14'x18', 11'6"x18'.
DORR RAKE CLASSIFIERS—5'x25', 8'x38', 12'x31', 14'x36'.

DORR BOWL RAKE—3'x24'x12', 5'x30'x26', 10'x24'x28'
WOODS SAND CLASSIFIER—72", 96".
CONVEYCO SAND CLASSIFIER—4'x10'.
17 THICKENERS—100', 80', 36', 24', 16' & 12'.
20"x15 EAGLE SINGLE SCREW COARSE MATERIAL WASHER.

ROTARY DRYERS & KILNS

DRYERS—40"x21', 4'x20', 6'x40', 6'x60', 8'x125'.
KILNS—6'x28', 6'x7'x80', 7'x110', 8'x125', 10'x105'.

JAW CRUSHERS

BLAKE TYPE—66"x84", 56"x72", 36"x48", 36"x42", 30"x36", 24"x36", 18"x36", 16"x32".
SINGLE SHAFT—20"x36", 18"x36", 10"x24".
CAM & ROLLER—24"x40", 14"x26", 11"x26", 10"x20", 6"x20".

GYRATORY FINE REDUCTION CRUSHERS

SYMONS—3', 4', 5½'.
KENNEDY—198, 258, 378.
SUP. McC.—6", 10", 18" A-C 322B.

GYRATORY PRIMARY CRUSHERS

6", 10", 14", 16", 26" & 36" SUP. McC.—Gates AL. CHAL. 3, 4, 5, 6, 7½, 8, 9, 12K.

CONVEYORS

30" x 140', 30" x 160' & 36" x 200'.

STEEL DERRICKS

GUY: 8 TON 85 FT. BOOM, 25 TON 60 FT. BOOM, 15 TON 100 FT. BOOM, 20 TON 115 FT. BOOM, 50 TON 100 FT. BOOM.
STIFF LEG: 5 TON 70 FT BOOM, 15 TON, 100 FT. BOOM, 25 TON 100 FT. BOOM, 75 TON 135 FT. BOOM, 1—5 TON 100 FT. BOOM.

ASPHALT & OIL TANKS

15—8,000, 10,000 & 20,000 GAL. CAP. WITH COILS. 6—10,000 GAL. R.R. CAR TANKS.

RAILWAY CARS

177—DUMP STD. GA.—20, 16, 12, 6 & 4 YD.
36—FLATS—10 TON, 40 TON, 50 TON CAP.
44—TANK CARS—8,000 & 10,000 GAL. CAP.
75—V Dump Cars, 1½ & 3 Yd.

R R CAR DUMPER

150 TON CAP. STD. GA. CAR DUMPERS.

AIR COMPRESSORS—ELECTRIC

198, 420 & 676 WORTHINGTON BELTED.
1302 CFM & 1574 CFM INGER. RAND PRE.-2.
1170 CFM GARDNER DENVER HAE1034-2300 V.
1578 & 2200 CFM—OCE—CHGO. PNEU. ELEC.
3078, 3864 & 5040 CFM Inger. Rand.

DIESEL LOCOMOTIVES

1—25 TON, 1—80 TON GEN. ELECTRIC.
2—35 TON PORTER, 1—65 TON WHITCOMB.

R. C. STANHOPE, INC.
60 E. 42nd St. New York 17, N.Y.

"The Origin and Nature of Ore Deposits"
by R. T. Walker and W. J. Walker.
The Walker Association, Box 1066, Colorado Springs, Colorado.
$6.50 postpaid in the United States
$6.75 postpaid in Canada and Mexico
$7.00 postpaid in other countries
On request, will be sent on approval.

FOR SALE

A complete gravel, pumping, screening, crushing and washing plant. This is an electrically operated plant complete with all motors, starters, and controls.

It is made up of a complete 8" dredge and a permanent steel plant and structure. The dredge is a steel compartmented barge, 20' x 30', with 8" Amsco dredge pump, 200 HP, 860 RPM motor, with all auxiliaries, gantry, winch, priming pump, transformer, submarine sable, suction discharge pipes.

The plant is Iowa Mfg and Eagle Iron Works equipment consisting of complete steel structure, jaw crusher, roll crusher, screen, 32' sand dehydrator tank, 2 Eagle screws and 6 conveyors.

This plant has been in operation approximately 90 days and is offered for sale in whole or in part. We would consider selling plant and dredge separately.

AVAILABLE IMMEDIATELY. Call, write or wire prices to

H. W. MOORE EQUIPMENT COMPANY

5990 Colorado Blvd. Denver, Colo.
Phone ATlas 8-0771

WANTED TO BUY
ROTARY DRYERS
ROTARY KILNS
BALL & ROD MILLS
DIESEL LOCOMOTIVES & CRANES
R. C. STANHOPE, INC.
60 E. 42nd St., New York 17, N. Y.

HEAVY MACHINERY HAULING
Full Equipment to Handle Any Job
MUSKE MACHINERY CARTAGE, INC.
Franklin Grove, Ill. Phone 128

WANTED TO BUY

Vertical swing shaft for old 104 or 105 Northwest. 3 comp agg bin with scales. Four wheel drive bucket loader.

Write or phone 821
GEORGE THORESON, SR.
E. Lake Rd. North East, Pa.

CYLINDER HEAD REBUILDING SERVICE

CRACKS REPAIRED
MACHINED READY-TO-INSTALL
VALVE GRINDING
PRESSURE AND MAGNETIC TESTING

INTERNATIONAL
CATERPILLAR
G. M. C.
BUDA
etc.

GAS AND DIESEL

CHAPIN CYLINDER HEAD CO.
9 miles west of Jacksonville in
CHAPIN, ILL. PHONE #3

FOR SALE OR RENT

65 ton Whitcomb Diesel Electric Loco.
45 ton General Electric Diesel Elec. Loco.
10 ton Plymouth Diesel Loco. New 1950.
Christian 2D Hoist & Swing, 138 HP Buda Diesel Engine. 15,000# SLP.
2 100 HP Lucey Portable Horiz. Fire-Box Boilers. 200 lbs. Oil Fired. ASME.
30 ton Wiley Stiffleg Derrick. 80' Boom
1700 CFM Joy Elec. Air Compressor New 1954
600 CFM 1-R Gyrofle Diesel Compressors
4 yd. P&H 155 Dragline new 1950.

Whisler Equipment Co.
Affiliated With
Mississippi Valley Equipment Co.
1907 Railway Exchange St. Louis 1, Mo.

HERE ARE YOUR BEST BUYS!

Five Cranes & Shovels

Marion	"331"	¾ yd. Shovel or Dragline.
Insley	"K-12"	½ yd. Trench Hoe or Dragline.
Insley	"K-10"	⅝ yd. Dragline or Trench Hoe.
Unit	"514"	½ yd. Trench Hoe, fair condition.
Quick-Way	"S"	1/3 yd. Hoe & Crane (New 1953) mounted half track.
Link-Belt		Shovel Attachment complete for LS-85 (⅝ yd.)

SEVEN TRANSIT MIXERS

Jaeger 3 yd. (4¼ yd. Agitator) HI-Discharge, 1945-1947 Models, one mounted on 6-Wheeler, one unmounted.
Smith 3 yd. (4¼ yd. Agitator) HI-Discharge, unmounted.
Rex 3 yd. (4¼ yd. Agitator) HI-Discharge, mounted F-8 Ford Tandem.
Jaeger 4½ yd. (6 yd. Agitator) HI-Discharge, mounted I-H KB-7 Tandems (2).
Rex 5½ yd. Demonstrator Adjusta-Wate Mixer mounted RF192 International Tandem Axle Truck.

FIVE END LOADERS

Caterpillar	"D-6"	Diesel Tractor, Traxcavator Loader, 1950 model—excellent.
International	"TD-9"	Diesel Tractor w/Drott Front End Loader.
Cletrac	"DGH"	Used Gas Crawler w/Drott HI-Lift 1½ yd. Front End Loader. Needs some track work. Make offer!
Hough	"HM"	1½ yd. Four Wheel Drive Payloader. Reconditioned.
Pettibone	"175D"	Demonstrator 1¾ yd. (Struck) Tractor-Shovel, 4-wheel drive, power shift transmission, planetary axles. New Guarantee.

MISCELLANEOUS

Haiss	"75C"	Used Bucket Loader, crawler-mounted.
Barber-Greene	"522W"	Bucket Loader, rubber-tired, reduced to sell.
Chicago Pneumatic	"60"	Reconditioned Portable Compressor. We have 3 of these from $800 to $1250.
Parsons	"21"	Ladder Type Trencher on Crawlers, digs 9' deep, 24" cutters. Priced to move.
Bayport		23 yd. New Aggregate Bins.
Caterpillar	"D318"	Diesel Electric Generator Set, 50 KW.

NOTE: All This Equipment Located in our Yard.

EIGHMY EQUIPMENT COMPANY
120 S. Pierpont
Rockford, Illinois Phone 4-6706

GOOD USED COAL STRIPPING EQUIPMENT

5480 Marion Electric 15 yard Shovel
1600 P&H Electric 6 yard Shovel
2400 Lima 6 yard Standard Shovel
4500 Manitowoc 4 yard H.L. Shovel
111-M Marion 3 yard H.L. Shovel
1201 Lima 2½ yd. H.L. Shovel
3500 Manitowoc 2 yard H.L. Shovel
Unit 1020 ¾ yd. Shovel—1 yr. old
625 Page Diesel Drag, 160′, 9 yd.
6160 Monighan Drag, 160′, 8 yd.
625 Page Diesel Drag, 150′, 10 yd.
4500 Manitowoc Drag, 140′, 4½ yd.
621-S Page Diesel Drag, 135′, 6 yd.
7200 Marion Diesel Drag, 135′, 7¾ yd.
621-S Page Diesel Drag, 125′, 7½ yd.
200-W Bucyrus Monighan Drag, 125′
7-W Monighan Elec. Drag, 120′, 7 yd.
618 Page Diesel Drag, 120′, 5 yd.
5-W Bucyrus Monighan Drag, 120′, 5 yd.
2400 Lima Dragline, 110′, 6 yard
111-M Marion Diesel Drag, 80′, 5 yd.
1055 P&H Dragline, 80′, 3½ yard
1201 Lima Dragline, 85′, 3 yard
955 P&H Dragline, 90′, 2½ yard
3500 Manitowoc 60 ton Crane
802 Lima Cranes
4161 Marion Comb. Elec. Drag & Shovel
100-B Comb. Electric Drag & Shovel
1201 Lima Comb. Shovel & Crane
600 Reich Heavy Truck Mounted Rotary Air Drills
Mayhew Rotary Truck Mounted Air Drills
Portadrill Truck Mounted Air Drill
42-T, 29-T & 27-T Well Drills
Euclid Trucks—Bottom & Rear Dumps
Bay City, Lorain, P&H & Osgood Truck Cranes
Caterpillar, International & Allis-Chalmers Bulldozers

FRANK SWABB EQUIPMENT CO., INC.
313 Hazleton Nat'l Bank Bldg.
HAZLETON, PA.
GLadstone 5-3658

FOR SALE

1—42x40	Farrell Jaw Crusher
30x42	Buchanan Jaw Crusher
18x32	Telsmith Roller Bearing Jaw Crusher
14"x26"	Acme Jaw Crusher
10"x20"	Blake Type Jaw Crusher
9"x36"	Telsmith Wheeling Roll Br. Jaw Crusher
#32	Telsmith Gyratory Crusher
28"	Telsmith Intercone Crusher
	Double Chain Bucket Elevator, Bucket Size 20", 60' Centers
10'	Tandem Roma Diesel Scraper
1—100 K.W.	G.M.C. Diesel Generator Set
1—150 K.W.	G.M.C. Diesel Generator Set
16"	Telsmith Gyratory Crusher
30"x42"	Pioneer Jaw Crusher and Feeder
10"x36"	Cedar Rapids Crusher
18'x30"	Telsmith Rolls
10—16	Gradler Jaw Crusher
10—20	Jaw Crusher
10"	Telsmith Gyratory Crusher
2—5'x14'	Triple Deck Telsmith Screen
2—4x14	Double Deck Aggregate Screen

BLUE BALL MACHINE WORKS
BLUE BALL, PA.
Phone ELgin 4-7502

Save on Your INDUSTRIAL TRACK

FOSTER QUALITY — FULLY GUARANTEED
RELAYING RAILS
Handle more cars better—cost less to install and maintain. Foster stocks all Rail Sections 12# thru 175#, Switch Material and Track Accessories.
SEND FOR CATALOGS
RAILS - TRACK EQUIPMENT - PIPE - PILING
L. B. FOSTER CO.
PITTSBURGH 30 • NEW YORK 7 • CHICAGO 4
ATLANTA 8 • HOUSTON 2 • LOS ANGELES 5

24" & 42" Belt Conveyors—Complete
4' SYMONS Cone Crusher with Motor
Roll Crusher with a 40 HP Motor
3—Portable Steel Bins—Good
20"x18' Material Washer—NEW
20x36 Portable Crusher with Diesel
700 KW Diesel Engine/Generator Set
H. & P., 6719 Etzel, St. Louis 14, Mo.

BARGAIN: 8x125′ Kiln & 7x51′ Cooler
5½x28, 5½x40, 6x60, 10x101 **DRYERS**
1260 HP 1050 KVA Diesel Elec. **POWER PLANT**
QUARRY Plant: shovels, 4248 Jaw, Cones, etc.
CRUSHERS: 440, 936, 1016, 1020, 1040, 1524, 1536, 1836, 2036, 2436, 2540, 3042, 4836, 4042, 4248
JAW. #19, 38½ Kennedy, Austin 7½, 16", 20", 30", 36" McCully, 2'4" Traylor **GYR.** 1616, 3018, 4022 **DBL. ROLL**
PLANTS: AW81, Diamond 65, Pioneer 40V
½, ¾, 1, 1½, 2 & 6 yd. **SAUERMANS**
CONVEYORS: 24"x60', 18"x30', 18"x70', 20"x200'
APRON Feeders: 2½x8, 3x10, 3x12, 4½x12'
WASHERS: Eagle 14"x14', 16"x12', 24"x18', 6½x34'
SHOVELS & DRAG: Bucyrus 16B, 22B, 38B, NW 3, 6, 7 & 80D. Link Belt LS50, LS90. Koehring 605. Marion 40A, 92. Lima 1201, Lorain 75, 820 24"x48" Dings Magnetic **PULLEY,** 24x25 Drum
Repres: Bonded Scale & Machine Co.
MID-CONTINENT EQUIPMENT CO. INC.
6321 Gannon St. Louis 24, Mo. Wydown 1-2828

FOR SALE

Williams #6 Jumbo Hammermill
Allis-Chalmers 225 H.P. Elect. Motor
Misc. Shaker screens, chutes & hoppers.
FRED R. SIEVERS
7461 So. Lowe Ave. Chicago 21, Ill.
Phones: RAdcliffe 3-2486-7-8

CRANKSHAFTS

New Process ROTOKROME Plated

CAMSHAFTS REGROUND

Connecting Rods Rebuilt
Rotary Process Hard Chrome — Magnafluxing—Electric Heat Treating. Serving National Railroads, Bus and Truck Companies, including Diesel Equipped.
CLEVELAND HONE & MFG. CO.
8816 Harkness Rd., Cleveland 6, Ohio

QUARRY EQUIPMENT

Cedarapids 2540 jaw only.
Cedarapids 1036-3025 Commander on rubber.
Cedarapids 1036-2416 Junior tandem. Rebuilt.
Cedarapids single pass plant with 1024 jaw.
30" x 82' belt conveyor with 15 H.P. wrap drive.
36" x 4'6" apron feeder.
Williams 20" x 33" pulverizer.
12" x 35' inclined open elevator. New.
Seco 3' x 10' triple deck screen. Reconditioned.
Pioneer 4' x 8' double deck screen.
27½ ton, single-compartment, 8' x 12' bin.
60-ton, two-compartment, 8' x 18' storage bin with clam gates.
100-ton, two-compartment, 13' x 23' bin.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also conveyor belting.
18" diameter x 20" face magnetic pulley.

SHOVELS AND CRANES

P & H 855 2-yard diesel powered shovel-drag.
Lorain 75A shovel, 1¼-yard.
Unit 1020 ¾-yard diesel powered shovel-crane drag.
Northwest 25, ¾-yard diesel powered crane-drag.
Lorain TL25S ¾-yard gas powered backhoe.
Link Belt LS-85 ¾-yard diesel powered shovel-drag.
Lima 34 Paymaster ¾-yard diesel shovel.
Lorain Byers 83 ¾-yard diesel powered backhoe.
Lorain Byers 83 ¾-yard gas powered clam-crane.
Lorain L-40 ¾-yard diesel powered clam-crane-drag.
Speeder 60, ⅝-yard gas powered crane.
Lorain L-15, ½-yard gas powered backhoe.
Bucyrus-Erie 10B ⅜-yard shovel, hoe, crane.
Link-Belt LS-50 backhoe, gas power.
Lorain MC504-W crane clam. Reconditioned.

TRACTORS, TRUCKS, SCRAPERS, ETC.

1—Euclid 18-yard twin engine scraper. Very good condition.
1—Euclid 15.5-yard Scraper. Excellent condition.
3—Euclid 7-yard overhung engine scrapers.
6—Euclid 13-yard bottom dumps.
2—Euclid tractors with 3200 gallon water tank semi-trailer.
2—Euclid Model 3BV loaders.
3—Caterpillar DW-10 scrapers. Good.
1—Wooldridge 7-11 yard scraper.
1—Caterpillar DW-10 with Athey side dump.
1—International TD9 crawler tractor.
1—International TD18 with Bucyrus-Erie bulldozer blade. Excellent condition.
1—Allis Chalmers HD-10 Tractor with Hydraulic Bulldozer Blade.
1—Caterpillar D-7 with cable bulldozer blade, winch.
1—Caterpillar D-8 with cable bulldozer blade.

DIESEL POWER UNITS

Cat. D7700, 74 H.P. at 1000 RPM. Rebuilt.
Cat. D13000, 145 H.P. at 1000 RPM. Rebuilt.
GMC, twin diesel. Rebuilt.
GMC 3021C, 3-cylinder. New.
GMC 371RC, 3-cylinder. Rebuilt.

AIR COMPRESSORS

105 cu. ft. Ingersoll-Rand gas portable.
160 cu. ft. Ingersoll-Rand gas portable.
210 cu. ft. Gardner-Denver gas portable.
500 cu. ft. Gardner-Denver diesel portable.
600 cu. ft. Gardner-Denver diesel portable.
500 cu. ft. Ingersoll-Rand, Waukesha Power.
420 cu. ft. Gardner-Denver two-stage stationary.

ASPHALT PLANT

Barber-Greene Model 848 with drier, graduation unit, etc.

L. B. SMITH, INC.
CAMP HILL, PA.
Phone Harrisburg REgent 7-3431

SPECIALS

1—New 6½'x150', kilns
1—#6 Williams Hammermill
1—28" Telsmith Intercone Crusher
1—10½" Clyde Dehydrator

KILNS

1—10½'x100' Kiln

CRUSHERS

1—24"x36", 18"x36", 12"x24" Jaw Crushers
2—42"x16" Allis-Chalmers Crushing Rolls
2—24"x14" Rogers Iron Works Crushing Rolls. Rebuilt
1—36"x16" rebuilt Sturtevant Rolls
1—24"x12" Farrell Bacon Crushing Rolls. Rebuilt
1—6", 10", 16" and 20" McCully Superior Gyratory Crushers
No. 3 up to 12 Gyratory Crushers

BALL, ROD & TUBE MILLS

1—4'x11' Rod Mills
2—5½'x20' and 5'x22', 6'x22' 7'x24' Tube Mills

MISCELLANEOUS

8'x10', rotary Filters

We Make New Dryers, Kilns, Dust Collectors

Have you any machinery that you want to sell?

W. P. HEINEKEN, INC.
50 Broad St. New York 4, N. Y.
Phone Whitehall 4-4236

MOTORS AND GENERATORS

All sizes, new and rebuilt. Starters, accessories, pulleys and repair parts. Gear motors, Falk Shaft mounted Speed Reducers, couplings and V-belt drives.

EXPERT REPAIR SERVICE

NUSSBAUM ELECTRIC CO.
220 E. Douglas Avenue Fort Wayne, Ind.

PORTABLE QUARRY PLANT

1952 Universal 293Q Junior with 1824 jaw, 24 x 32 Roll, GM 671 rebuilt engine on the plant—excellent buy.

EDDY & COMPANY
2500 S. Pennsylvania Lansing, Mich.
Ph. IVanhoe 2-1107

FOR SALE
DIESEL LOCOMOTIVES

2—10 ton Plymouth, Model DHD; 40½" gauge, Four Wheels, Serial #5207 & #5208. New 1946.
1—10 ton Plymouth, Model DHDX; 40½" gauge, Four Wheels, Serial #5412. New 1949.

These units are fully equipped and can be adjusted so they can operate on 36" and 42" gauge by shifting the wheels on the axle in or out.

Additional information on request.

PHILADELPHIA TRANSFORMER CO.
Box 566 Dalton, Pa.

MANITOWOC

Stripping Shovel, Model 3500, With 35' Boom, 27' Stick, 2 yd. Dipper, Caterpillar D-17000 Diesel Engine. Located in Ohio.

PRICED TO SELL.

ANDERSON EQUIPMENT CO.
Box 1737 Pittsburgh 30, Pa.
Phone: LEhigh 1-6020

NORTHWEST 80D Shovel #14580 w/Murphy 21 diesel. $30,000. Rental Purchase. Also 80D Dragline available #14585. $30,000.
BUCYRUS ERIE 22B Electric Mine Shovel, 1 cy. bucket. New 1951. Yard.
BUCYRUS ERIE 37B Shovel Front, like new. $2000 Yard.
UNIVERSAL Secondary Portable Crushing Plant w/18x30 r.b. rolls & #3 hammermill crushers, 4x12 2-deck vibr. screen, rotovator, 30" conveyors, diesel-electric and diesel power units, on tandem rubber. Overhauled. $17,500 Rental purchase. Yard.
CEDARAPIDS Portable 18x24 r.b. Jaw Crusher Plant, w/plate feeder, vibr. grizzly, underconveyor, Case power, on factory tandem rubber. Al. $6,000.
PIONEER 54x24 Triple Roll Portable Plant w/30" x 27' feed & 30" x 29' discharge conveyors, factory mounted tandem rubber, front dolly, new 1953, weight 69,000 lbs. Excellent. $17,500 Yard.
LIPPMANN Single Unit Portable Crushing & Screening Plant w/apron feeder, 18x36 r.b. Jaw, 30x18 rolls, vibr. screen, rotovator, factory mounted tandem rubber. Good.
AUSTIN WESTERN 25x40 r.b. Jaw Crusher & 42" x 12' apron feeder. Good. $13,500.
CEDARAPIDS Pitmaster Gravel Plant, 10x16 jaw, 16x16 roll, 2½x10 2-deck screen, delivery & reject conveyors, rotovator, GMC diesel power. New 1953, used 1100 hrs. Like new. Price $22,000 Rental Purchase.
CEDARAPIDS Jr. Tandem Plant, w/10x36 Jaw, 24x16 rolls, 42"x10' screen, rotovator, GMC Diesel, on tandem rubber. New 1955, used 4 mos. $37,500.
BARBER GREEN 82A Bucket Loader, excellent. $2850 Yard.
CEDARAPIDS 25x40 r.b. Jaw Crusher, reconditioned. $9250.
DIAMOND 15x24 r.b. Jaw Crusher w/electric motor. Good $2500
PIONEER 40x22 Triple Roll crusher, recently rebuilt $8250
UNIVERSAL 40x24 r.b. Double Roll Crusher. Bargain. $3850.
McLANAHAN 36x18 Single Roll Crusher, good. $3000 Yard.
CEDARAPIDS 30x33 Hammermill, excellent. $2750 Yard.
BUCYRUS ERIE 42T Blast Hole Drill & #12 Bit Dresser, used two seasons. Excellent. $17,500 Yard.
GARDNER DENVER D99D Jumbo Drills on truck & tractors. Good. Yard.
ROBBINS 4x10 2-deck Gyrex Screen. Al. $1350 Yard.

WENZEL MACHINERY RENTAL & SALES CO.
565 S. 10th Kansas City, Kans.
Mayfair 1-1710

8' x 125' VULCAN ¾" SHELL RIV. ROTARY KILN

DARIEN CORP.
60 E. 42ND ST. N. Y. 17, N. Y.

CATERPILLAR DW-10 SCRAPERS

Two, Caterpillar DW-10 Scrapers, hydraulic controls, old but in good running condition. These units more than worth the price for the parts involved not to mention working life. Would make good rubber tired tractor for pulling roller.

$3,750.00 Ea. Both $7,000.00
FOB Nashville, Tenn.

EUCLID-TENNESSEE, INC.
720 Murfreesboro Rd.
Nashville, Tenn.
Tel. ALpine 6-1648

FOR SALE

Crushing Plant, Diamond #35, 2½ Deck, 9 x 24 Jaw—Portable—Hopper and Plate Feeder—Feed Conveyor. Waukesha Gas. Motor. Very Good Condition.

Meyer & Meyer Gravel Corporation
6375 Genesee Street, Lancaster, New York

FOR SALE
TERMS
Euclids

17 Model 23TDT Euclid Bottom Dumps—New York & Texas. 2 years old $25,000
9 Model 12TDT Euclid Bottom Dumps—Texas & Kansas. 4 years old $18,000, $20,000

MOTOR GRADERS

9 Caterpillar 8T No. 12 Motor Graders—California, Texas, Kansas, New York $5,000 up
3 Caterpillar 9K No. 12 Motor Graders—Kansas, Oklahoma, Texas $1,000 up
1 Caterpillar No. 112 Motor Grader—Kansas $4,500
Austin-Western 99H Motor Graders—Kansas & Texas $1,000 up

SCRAPERS

2 Caterpillar DW-21's—California $16,500 up
6 Caterpillar DW-20's—California & Kansas $17,000

SHOVELS & DRAGLINES

Bucyrus-Erie 22-B Dragline—Texas $15,000
Marion 362 Shovel, Backhoe, Dragline—Oklahoma $25,000

For Further Information:

TECON CORP.
202 Davis Bldg. Dallas, Texas
Phone Riverside 8-1441

E. R. FUNK
Res. Phone
Fleetwood 2-8870

W. P. BREWER
Res. Phone
Davis 7-5719

IMMEDIATE DELIVERY

New Equity standard steel 45' tugs. Diesel powered, single and twin screw, 200 to 400 H.P. also, 55' tugs.

Call or wire today

EQUITABLE EQUIPMENT CO. INC.
410 Camp St. New Orleans 12, La.

UNITIZED PLANT

Cedarapids Crushing Plant, consisting of:

AAAA 2540 Primary Jaw Crusher w/feeder conveyor, drives, etc. and D13000-X Cat. engine.
BBB 1036 Jaw Crusher Scalping Unit w/screens, conveyor, etc. and D8800-X Cat. engine.
CCC 4024 Secondary Roll Crusher plant w/screens, conveyors, etc. and D17000-X Cat. engine.

A complete plant in running condition.
F.O.B. Syracuse, N.Y. $40,000

SYRACUSE SUPPLY COMPANY
SYRACUSE, N. Y.
PHONE 4-3157
(Cedarapids and Caterpillar Dealer)

FOR SALE

CLASSIFIERS Dorr 10 TPH, 26' bowl with rakes. Telsmith 36" x 25' sand drag with box.
COLLECTORS Ducon Wet and Ducon Dry types. Both have 10,000 CFM capacity.
CONVEYORS Rex 36" x 54' pan. Link-Belt 30" x 33' pan.
CONVEYOR 80' drag type with 15 x 5" cast flights on 730 chain.
ELEVATORS 40' centrifugal with 10 x 6 buckets on 102B chain.
One 90' centers, open inclined type.
FEEDERS Two Jeffrey apron type with sides, 21" wide flights, 10'6" centers. Also one 24" x 18' apron feeder.
GRIZZLY ROLLS 3' x 8' frame containing six live rollers 36" long x 12" dia.
HAMMERMILLS 42 x 24 Jeffrey type B, and S-6 Pennsylvania.
PUG MILL Chambers 30" x 14'7".
SCREENS Robins Gyrex dble. deck 4' x 6'6".
Rotex Model 421, 60" x 84".

G. & W. H. Corson, Inc.
Plymouth Meeting, Pa.

KILNS—COOLERS—DRYERS

705-20 Link-Belt Roto Louvre, 88
502-16 Link-Belt Roto Louvre
8'6" x 35' Bartlett-Snow Rotary Dryer
7' x 30' Bartlett-Snow Rotary Dryer
6' x 30' Bartlett-Snow Rotary Dryers (2)
5' x 20' x ¼" welded

PULVERIZERS—MILLS—CRUSHERS

8" x 15" Pacific Jaw Crusher
18" x 18" Jeffrey 1-roll spiked
14" x 16" B. & S. 2-roll spiked
Raymond #1 Pulverizer
Pennsylvania Impact Pulverizer 50 HP
20" x 12" Jeffrey Hammer Style A, NEW
15" x 8" Jeffrey Hammer Style B, NEW

BUCKET ELEVATORS

28' to 53'6" c/c 8x5 buckets (4)
29' to 55'4" c/c 14x7 buckets (4)
L.B. #57 Bulk Flo 20' rise (2)

SCREENS

Rotex #21, 40" x 84"
Robinson Gyro Sifter 28A
Tyler-Hummer 4' x 15' single deck
Universal Roads 18" Cent. Separator
Raymond 16' Single Whizzer
Link Belt 4' x 10' Double Deck

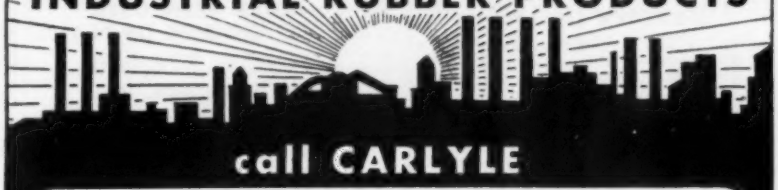
MISCELLANEOUS

47' Screw Conveyor, 15" 2 HP motor
12" Merrick Weightometers
Rotoclone Collector, Type W, Size 36
Paddle Mixer 12" x 12' Twin Shaft (2)

►SEND US YOUR INQUIRIES◄

HEAT & POWER CO., INC.
60 East 42nd St. New York 17, N.Y.
MURRAY HILL 7-5280
(Machinery & Equipment Merchants)

When You Need
LOW COST—DEPENDABLE
INDUSTRIAL RUBBER PRODUCTS



call CARLYLE

FOR ALL YOUR REQUIREMENTS OF

RUBBER HOSE

Air, Acid, Paint Spray, Solvent Welding, Pile Driver, Discharge Fire, Fuel Oil, Oil Suction & Discharge, Gasoline, Suction Water, Steam, Vacuum Pneumatic, Road Builders

BELTING

Conveyor Elevator, Grader Chute Lining, Hot Material Mucker, V-Belts Transmission

PROMPT SHIPMENTS LOW COST QUALITY PRODUCTS

CARLYLE RUBBER CO., INC.
103-107 Warren St., New York 7, N. Y. Dlgby9-3810

FOR SALE

1–7' x 50' Used DRYER, ½" riveted construction with new tires, gear, pinion, idlers, bases and lifting flights.

1–7' x 50' Used KILN, ½" riveted construction with new tires, gear and pinion, idlers and bases.

CHARLES V. FISH CO., INC.
530 Hamilton Street Allentown, Pa.
Phone HEmlock 5-4701

NEW—RAILS—RELAYING
Track Accessories
All prices cheerfully quoted

M. K. FRANK
480 Lexington Avenue - New York City
Park Bldg., Fifth Avenue - Pittsburgh, Penna.
105 Lake Street - Reno, Nevada

FOR SALE

Marion type 480-S Steam Shovel, 1¾ yard dipper. Boiler retubed 1955. Miscellaneous extra parts.

THE GIBSONBURG LIME PRODUCTS COMPANY
GIBSONBURG, OHIO

DEPENDABLE USED MACHINES

Special: Pioneer 18V port. gravel plant; jaw and roll crushers; Cummins Diesel. LIke new!

24"x60' conveyor
30"x125' conveyor
24x48 magnetic pulley
42" Pioneer Oro feeder
16x16 roll crusher
Cletrac DGH with Drott loader
Pioneer port. gravel plant
B-G #358 hopper car unloader
American 20 H.P. car puller
Int. TC-14 and B-E bulldozer
5x16 d.d. screen
Michigan truck crane
Insley K-12 crane
Unit 514 dragline
2 yd. Dumperete

This equipment rebuilt in our modern plant by expert mechanics. Come see it!

10004 Southwest Highway TRACTOR & EQUIPMENT CO. Oak Lawn, Ill.

FOR SALE

3—10" McCully Gyratory Crushers
3—Traylor No. 412 Type TZ Gyratory Crushers
1—New RCA Metal Detector 10" x 36" aperture
1—20" Traylor Heavy Duty Finishing Crusher
4—Allis Chalmers Gates "D" Crushers, Size 6
1—Traylor Rolls Crusher—30" x 72"
1—Fuller Kinyon System
1—Allis Chalmers Compeb Mill (for Pulverizing Limestone)
1—Covered Steel Barge, suitable for carrying cement
3—Wooden deck Scows
1—6' x 60' Dryer
5—24" wide x 10' long portable bag loading conveyors
1—24" wide x 6' long portable bag loading conveyor
1—Ingersoll-Rand Compressor, Imperial Type XCB
21—Well Drill Bits with 3¼" x 4¼", 7 API threads Sharpened and tempered 9¼"
7—Well Drill Bits with 4" x 5", 7 API threads Sharpened and tempered 9¼"

For Information write:

NEW YORK TRAP ROCK CORPORATION
230 PARK AVE. NEW YORK 17, N. Y.
TELEPHONE MURRAY HILL 9-8500

FOR SALE

1–RAYMOND 6-ROLL HIGH SIDE ROLLER MILL, MODEL 6669 WITH AIR SEPARATOR AND CYCLONES, ALL REQUIRED MOTORS INCLUDING 100 HP AND 200 HP 3 PHASE, 60 CYCLE, 220/440 VOLT MOTORS, ROTARY FEEDER, FURNACE AND OIL BURNER AND ALL PARTS OF COMPLETE INSTALLATION.

CONDITION: EXCELLENT.

R. GELB & SONS, INC.
U. S. 22 UNION, N. J.
MURDOCK 8-4900

EUCLIDS

15-Ton Rear Dump
1—91FD; 2—25FD; 4—27FD; 6—2FD; 2—5FD; 1—4FD.

Priced from $6,000.00 up to $20,000.00

ANDERSON EQUIPMENT COMPANY
Box 1737 Pittsburgh 30, Pa.
Phone: LEhigh 1-6020

MOTORS • GENERATORS
TRANSFORMERS
NEW • REBUILT
WORLD'S LARGEST INVENTORY

ELECTRIC EQUIPMENT COMPANY
Phone Station Collect GL 3-6783
P.O. Box 51, Rochester, New York

AGGREGATE PLANTS: Two complete modern Aggregate Plants with all necessary auxiliary equipment.
SAND SCREW: 24" x 25 ft. with steel box.
FEEDER: Austin Western 42" x 12 ft.
PAYLOADER: Hough 1½ yd. capacity.
ROAD ROLLERS: Huber 8 ton tandem and 10 ton. 3 wheel, gasoline powered.
PORTABLE CRUSHING PLANT: Diamond model 66, diesel powered.
DRAGLINE: Monighan electric, 8 yd. capacity, 160 ft. boom.
DRYERS: 2—6'4" x 62 ft. oil fired, single shell. One 6 ft. x 32 ft. for asphalt plant, excellent condition. One 4 ft. x 30 ft.
CLAM SHELL BUCKET: Williams 1¼ yd. capacity. Excellent condition.
BINS: 100 ton capacity, 3 compartment, 3 gates, for truck loading.
CAR SHAKER: With jib crane, 1 ton hoist, 5 H.P., 220/440 volt motor. Condition guaranteed.
OVERHEAD ELECTRIC TRAVELING CRANE: 10 ton capacity, 56' span, 3 motor, 230 volt, D.C.
JAW CRUSHERS: 10x15, 10x20, 12x24, 15x36, 18x36, 24x36, 25x40, 30x42, 40x42, 42x48.
REDUCTION CRUSHERS: Symons, Telsmith and Allis Chalmers—Various sizes.
DOUBLE ROLL CRUSHER: Size 10" x 16".
BALL MILLS: Allis Chalmers Compeb Mill 7' x 24 ft., 500 H.P. motor. Hardinge 8' x 48" Conical Mills, 200 H.P. motors.

We Buy and Sell Equipment Throughout North and Central America

A. J. O'NEILL
Lansdowne, Pa.
Phila. Phones: MAdison 3-8300—3-8301

USED EQUIPMENT FOR SALE

January 15, 1957

1—Cedar Rapids Roller Bearing Jaw Crusher, Model 1036 WC, above is less than 1 year old and in excellent condition. Jaw opening 10" x 36". Serial 17078. Price new $7,800. Price $5,000.

1—20" Symons Cone Crusher with standard cone. Complete with all oil piping. Excellent condition. Price $2,400.

1—Bonded Single Roll Crusher, Model SR 19, with hopper and 6 groove 24" C section sheave. This unit in good condition. Suitable for coal and other similar material. Used about 18 months. Price new $1,600. Price $700.

1—Thomas Double Drum Hoist complete with 50 HP slip ring controller and slip ring motor. This is in very good condition. Price $1,200.

1—Model 0-19 LeTourneau tractor drawn Pan scraper, 12 yard capacity, new in 1955. Used about 8 months. Excellent condition. Price $5,500.

1—Haiss Flat Belt Conveyor, Model 481, width 14", capacity 70 tons per hour. This belt is mounted on steel wheels and has an air cooled Wisconsin engine. Length 35 Ft. Price $500.

1—Gear for a 5' diameter drum. 101 tooth, 5" face, cast iron spur gear made in two (2) sections for easy mounting. This gear is new. Price new $500. Price $300.

1—Cast Steel Pinion, 14 tooth, 6¼ face, 2-7/16" bore with tapered keyway to match the above spur gear. Price new $80. Price $50.

1—Jaeger 315' Compressor, Serial 979, good condition. Price $400.

SCIOTO LIME & STONE COMPANY, INC.

Box 338
Delaware, Ohio

FOR SALE
SURPLUS CRUSHING EQUIPMENT

1—Austin Western 2540 Jaw Crusher complete with 3' x 10' Feeder grizzley and 100 H.P. electric motor all mounted on steel skid Price $15,000.00

1—Farrel Bacon 13 x 48 secondary Jaw Crusher complete with 125 H.P. electric motor. Price $8,000.00

1—Reliance Crusher 13 x 24. Price $1,500.00

All equipment in excellent condition.

GALLO ASPHALT COMPANY
1004 Springfield Avenue Irvington 11, N. J.

FOR SALE
WELDED STEEL BARGE

Extra heavy construction. Size—110' x 37' x 11'. Ideal for contractors. Deck Barge or Derrick Barge. Condition good. Built 1934. Sacrifice.
Also other Barges & Tugs available.

D. W. HARRINGTON
Bromo Seltzer Bldg. Baltimore 1, Md.
Saratoga—7-2647 Cable—"Masudo"

FOR SALE

9—Rotary Dryers & Kilns: 3'x15'; 3'x24'; 42"x25'; 4'6"x40'
2—Rotary Coolers: 104"x30'; 104"x70'
6—BALL MILLS: Allis Ch. 6'x16'; 5'x9'; 6'x5'; Patterson 5"x22', UNUSED
6—MINE HOISTS: Single and Double Reduction
1—Penna. Crusher Ring Type Granulator, Trojan size K3-24, 40 HP
1—Sturtevant 8 x 10 Jaw Crusher

PERRY EQUIPMENT CORP.
1414 N. 6th St. Phila. 22, Pa.
STevenson 4-3505

FOR SALE
ONE BRAND NEW 16" SUPERIOR McCULLY GYRATORY CRUSHER.
NEVER BEEN USED
DUE TO CHANGE OF PLANS.

PRICE $26,000
F.O.B. McCOOK, ILL.

DOLESE & SHEPARD CO.
Route 66 & East Ave. Hodgkins, Ill.
Phone: FLEETWOOD 4-2800
Ask for Mr. Doody

FOR SALE OR RENT—EASY TERMS
Rebuilt — A I Condition

488 Bucyrus Erie Shovel 2 cy Diesel
Northwest Model 6 Shovel, 1½ c.y.
Caterpillar D8 Bulldozer

WILLIAMS CONSTRUCTION COMPANY
Box 145 Balto. 20, Md. Murdock 6-0800

SAUERMAN DRAGLINE
FOR SALE
2-CU. YD.
SLACKLINE CABLEWAY

With standard Sauerman 150 hp, 2-drum variable speed hoist, with 2-cu. yd. bucket and steel mast. Used on one job only.

AMBURSEN DAM COMPANY, INC.
285 Madison Avenue New York 17, N. Y.
Murray Hill 5-7757

TOURNA ROCKERS

2—35-Ton LeTourneau Rear Dump. Worked 1600 Hours.
1—50-Ton LeTourneau Rear Dump. Worked 2000 Hours.

All Excellent Condition

ANDERSON EQUIPMENT COMPANY
Box 1737 Pittsburgh 30, Pa.
Phone: LEhigh 1-6020

FOR SALE
Bucyrus-Monighan Model 2-W Walking Dragline

2-Yard, 75 Ft. Boom, with Fairbanks-Morse Model 32-E-12 Diesel Engine, 2-cylinder.

Inspection: Brooklyn, N. Y.

Price & Further Details on Request

Construction & Power Machinery, Inc.
270 - 23rd St., Brooklyn, N. Y.
South 8-4900

For best results . . .

Advertise in

PIT AND QUARRY'S

BROADCAST SECTION

MAGNETIC PULLEYS

6—Dings Electro, 220 volts D. C. 12" dia., 22" face, 2" shaft, length of shaft 50".

5—Dings Electro, 220 volts D. C. 12" dia., 16" face, 34" shaft, shaft dia. 2".

Used, but in good condition.

PHILADELPHIA TRANSFORMER CO.
Box 566 Dalton, Pa.
Phone 3-4811

FOR SALE

1—42" Superior McCulley Gyratory Crusher
2—4' Standard Symons Cone Crushers

The above are in excellent condition.

THE WHITE-ORR COMPANY
755 Northwest Blvd.
Columbus 8, Ohio
CApital 4-3451

FOR SALE

Used Allis-Chalmers 16" McCulley S.G. Crusher without motor. Excellent running condition. Price $5,000.00.
Also available, at additional cost, new and used spare parts.

OLD COLONY CRUSHED STONE CO.
Vernon St. Quincy 69, Mass.

FOR SALE

2—12 ton, 36" Gauge, Model JLA Plymouth locomotives—Serial #5119-5120
1—10 ton, 36" Gauge Model DLC, Buda Engine Plymouth locomotive Serial #3285
1—10 ton, 36" Gauge JLA Plymouth locomotive
6—6 Cubic Yard 36" Gauge all steel, Pressed Steel Car Co. side dump cars, Timkin Bearings
8—5 Cubic Yard, 36" Gauge, Square side dump cars, Plain Bearings. 50 tons, 40 lb. rails.

FOLEY & BEARDSLEE
CLARKSTON, MICH.

FOR SALE

New Meckum 8", R.H. Bottom Discharge Heavy Duty Dredge Pump. Repossessed Equipment. Never Used. Full Manufacturers Warranty. Write or Phone:

J. W. MECKENSTOCK & CO.
Dayton Road Phone 2521
Ottawa, Illinois

SHOVEL, ¾ YD. LIMA PAYMASTER

This shovel in excellent condition, bought new 1955, 15 mos. old, has had 12 mos. use. Powered by Cummins HRC Diesel Engine. Sells new delivered Nashville approx. $28,000.00.

Price FOB Nashville, Tenn.
$16,000.00

Will finance to responsible party.

EUCLID-TENNESSEE, INC.
720 Murfreesboro Rd., Nashville, Tenn.
Tel. ALpine 6-1648

LIQUIDATION

Baltimore, Maryland

6—Bartlett & Snow 8½′ x 35′, 7′ x 30′, 6′ x 30′ direct heat Rotary Dryers complete with feeders, blowers, motors, 304 SS Clad 17′ from feed end.
1—Raymond 16′ dia. single whizzer Mechanical Air Separator with 50 HP mtr.
4—Tyler Hummer 4′ x 15′, 3′ x 15′, Type 3B single deck Screens with Thermionic Units.
5—Bartlett & Snow totally enclosed Bucket Elevators 28′ to 55′ centers, 8″ x 5″ buckets, motor driven.
1—Link Belt totally enclosed Bucket Elevator 51′ centers, 14″ x 7″ buckets, motor driven.
150′ Screw Conveyor 14″ and 18″ dia. with steel troughs and covers.
1—Rectangular two-compartment Bin 22′8″ long x 20′6″ wide x 18′ deep.

Representative on Premises
Your Inspection Invited

BRILL Equipment Company
2401 Third Ave. New York 41, N. Y.
or
4101 San Jacinto St. Houston 4, Texas

ALL PURPOSE DYNAMOMETERS

Measures tractive power, tension, mechanical pressure, line pull and will weigh up to 20,000 pounds as a suspension scale. These instruments are new and unused and packed in original metal carrying case complete with alloy steel attachment clevises. Solve your own problems and prove the quality of your products to your customers.

10,000 Pound Instruments Complete with 5″ Dial $40.00
20,000 Pound Instruments Complete with 5″ Dial $60.00

FREIGHT PREPAID
Send Check For Prompt Service

AERIAL TRAMWAY

2—125 hp. 440V motors with complete switchboard. 2800′ 1¾ special tramway cable with 1 lot wheels, rigging and gear reducer.

2—2¼ yard cement buckets.

Excellent Condition
Used on one job only

$29,500.00

Real BARGAIN!

Steel tunnel forms for concrete, 13′6″ radius.

PACIFIC AMERICAN COMMERCIAL CO.

P. O. BOX 3742A SEATTLE, WASH.

FOR SALE
1 only Cat D13000 Power Unit (new)
1 only 4¼′ Std. Symons Cone Crusher (new)
1 only 4′ Short Head Symons Cone Crusher ,new)
1—42″ Allis Chalmers Gyratory Crusher (used)
15x36″ Pioneer Crusher 10x30 Good Roads Crusher

Subject to prior sale.

KENTUCKY-VIRGINIA EQUIPMENT CO.
4926 Southern Pkwy. Louisville, Ky.

RELAYING RAIL

Track Accessories
All Sizes

LEFTON INDUSTRIAL CORP.
***General Office:* 212 Victor Street**
St. Louis 4, Missouri

6—DORR 12′ x 31′ 6″ CLASSIFIERS

6 DORR TYPE QSFX, QUARDRUPLE RAKE CLASSIFIERS, 12′ WIDE, 31′6″ LONG WITH 20 HP 440 V. MOTORS.

R. C. STANHOPE, INC.
60 E. 42nd St. New York 17, N. Y.

FOR SALE

1 - Barber-Greene, model 522 bucket loader, 1¾ yd. per min. capacity, pneumatic tires, very good condition $1,000.00

1 - Michigan model T-6K, ⅜ yd½ capacity Truck Crane, 25 ft. boom, tires very good condition. Price rebuilt 6,500.00

Howard T. Moriarty Co.
Contractors and Industrial Equipment
143 Broadway - Toledo 4, Ohio

WILLIAMS HAMMERMILL

This is a big #50 Williams Slugger Type Hammermill. This mill is a year old and in excellent condition. Cost $8,600.00 new.

FOB Nashville, Tenn. $5,000.00

EUCLID-TENNESSEE, INC.
720 Murfreesboro Rd., Nashville, Tenn.
Tel. ALpine 6-1648

FOR SALE

1—Drill—Blast Hole—No. 44 Loomis Machine Company No. 14517, Crawler mounted, 20 H.P., Electric 3/60/440 motor, wire line, steel frame and mast with tools, 4½″ stem and parts.
2—Locomotives, 8 and 12 ton, 36″ gauge Plymouth gasoline
2—Hammer mills—24″ x 24″ Eagle Crusher Company.

for further information contact
J. H. CLEMENTS

BASIC INCORPORATED
MAPLE GROVE, OHIO
POST OFFICE, FOSTORIA, OHIO

FOR SALE

Mayhew Rotary Drill, Model 600-1000 mounted on Ford Truck.

THE GIBSONBURG LIME PRODUCTS COMPANY
GIBSONBURG, OHIO

Equipment Located In All Parts of The Country

COMPLETE CRUSHING PLANT located in the Southeast. Including 42x48 r.b. Pioneer jaw, hopper & feeder. 4¼′ Symons. 3′ Traylor. 600 cfm air compressor. 2½ yd. & 1¾ yd. shovels. 15 ton Euclids. Conveyors. Screens. Feeders. Power. Prefer to sell as a package deal.

TWO—4′ SYMONS STANDARD CONES.
42″, 36″ & 30″ SUPERIOR McCULLY.
TWO—5 x 14 MARCY ROD MILLS.
30 x 42 r.b. Gruendler jaw. 3′ Symons & Telsmith.
A-C 322-R Hydrocone. #37½ Kennedy van Saun.
#50 Williams Slugger type Hammermill. 5050 Cedar Rapids impactor. Pioneer 54 x 24 double roll. 6 x 7 feeder with grizzly. 6 x 10 Link Belt grizzly. Joy continuous miner, low type.
P & H 1055-LC dragline. 700 KW diesel generator.

WANTED: 8″ or 10″ DREDGE for Minnesota.

STANLEY B. TROYER EQUIPMENT COMPANY
Box 97 phone 500 Crosby, Minnesota
New List of Surplus Equipment Now Available.

FOR SALE

1—NEW 7 ft. Symons Cone Crusher. Immediate delivery.
Allis Chalmers 8-32 Hydrocone with motor.

WESTERN EQUIPMENT SALES
P. O. Box 391 Kenosha, Wis.
Phone: Olympic 2-1743

FOR SALE

1—20′ x 30′ Steel Dredge Barge Completely equipped. 8″ Amsco Pump, 250 HP motor, power hoist, etc., including electric cable, spare parts, etc. Price $22,000.00 Where is, As is.

This boat has on many occasions loaded over 40 cars in 10 hours.

GULF SAND & GRAVEL CORPORATION
P. O. Box 77 Baton Rouge, La.

FOR SALE

MANITOWOC Dragline, 120′ boom, 5 yd. bucket. Price on cars $84,000.00
BUCYRUS ERIE Dragline, 140′ boom, 8 yd.
NORTHWEST model 80D shovel, 2½ yd., new in 1953, Price $26,300.00 on cars
NORTHWEST model 80D shovel & Drag new in 1951, Price $30,500.00 on cars
BUCYRUS ERIE Shovel 54B 2½ yd., 2½ yrs. old
BUCYRUS ERIE 38B shovel & drag.

WILLIAM LUBRECHT, III
Construction Equipment
311 W. Diamond Ave. Hazelton, Pa.
Phone: Gladstone 5-4041 or 5-0253

SHOVEL CABLE Mill Stocks At Savings

Type SH-A Type SH-C
Type SH-B Type SH-D
In addition a complete stock of portable power cables is carried.
Type W Type G

Every size, all constructions, any voltage is available . . . Mining Machine Cable, Portable Control Cable, Welding Cable, Feeder Cable, & Locomotive Cable.

UNIVERSAL WIRE & CABLE CO.
2927 N. Paulina, Chicago 13, Ill.
Branches:
Houston, Texas & Los Angeles, Calif.

Index to Advertisers

A

A A Wire Products Co. 359
Admiral Alloy Steel Corp. 292
Adrian Peerless, Inc. 379
Alemite Division, Stewart-Warner Corp. 185
*Allis-Chalmers Mfg. Co. 13, 139, 164-165, 222-223, 296
*Allis-Chalmers Mfg. Co., Buda Division 397
*Allis-Chalmers Mfg. Co., Construction Machinery Division 205, 255, 271
American Chain & Cable Co., Inc. 67, 202
American Clay Machinery Div., Huber-Warco Co. 382
American Cyanamid Co. 233
*American Manganese Steel Div., American Brake Shoe Co. 275
*American Steel & Wire Div. U. S. Steel Corp. 64-65
*Armco Drainage & Metal Products, Inc. 276
Armstrong-Bray Co. 288
Atlas Conveyor Co. 115
Atlas Powder Co. 266
Austin Powder Co. 251
Autocar Division, White Motor Co. 130-131
Automotive & Aircraft Division, American Chain & Cable Co., Inc. 202

B

*Babcock & Wilcox Co. 215
*Bailey Meter Co. 272
Baker-Raulang Co. 299
Baldwin-Lima-Hamilton Corp., Construction Equipment Division 273
Baltimore & Ohio Railroad 129
*Barber-Greene Co. 55, 339
Bay City Shovels 178
*Bemis Bro. Bag Co. 98
*Besser Co. 302, 345, 369, 373
*Bethlehem Steel Co. 263
*Bin-Dicator Co. 338
Bonded Scale & Machine Co. 387
Boston Woven Hose & Rubber Co. 259
Bradley Pulverizer Co. 220
Brill Equipment Co. 393
Broadcast Section 385-393
*Brunner & Lay, Inc. 26
Bucyrus-Erie Company 51
*Buda Division, Allis-Chalmers Mfg. Co. 397
*Buell Engineering Co., Inc. 291
*Butler Bin Co. 316

C

Calumet Division 116
Cape Ann Anchor & Forge Co. 99
Cardinal Scale Mfg. Co. 370
Carlyle Rubber Co., Inc. 391
Carolina Tire Co. 286
Carpenter Manufacturing Co. 379
Case Company, J. I. 151-154
Caterpillar Tractor Co. 91, 111-114
Chain Belt Co. 357, 399
Chase Foundry & Mfg. Co. 371
Chevrolet Motor Division, General Motors Corp. 249
Chicago Pneumatic Tool Co. 22
Cities Service Oil Co. 47
*Clark Equipment Co. 190-191, 193
*Clark Equipment Co., Axle Division 229
Cleaver-Brooks Co. 307
Cleveland Vibrator Co. 119
Cleveland Wire Cloth & Mfg. Co. 204
Cleveland Worm & Gear Co. ..... Inside Back Cover
Coates Steel Products Co. 230
*Colorado Fuel & Iron Corp. 183, 283
Columbia Machine Works 331
Columbia Southern Chemical Corp. 381
*Combustion Engineering, Inc., Raymond Division 170
Concrete Manufacturer Classified Section 375-377
Construction Equipment Division, Baldwin-Lima-Hamilton Corp. 273
*Construction Machinery Co. 318
Cook Bros. Equipment Co. 347
*Cross Engineering Co. 287

D

Dart Trucks 264
Daybrook Hydraulic Division 247
Deere Industrial Division, John 181
*Deister Concentrator Co. 240
*Deister Machine Co. 8
Des Moines Glove & Mfg. Co. 369
*Diamond Iron Works, Inc. 7
Dodge Mfg. Corp. 184
*Dorr-Oliver, Inc. 268
Dow Chemical Co. 333
Drott Mfg. Corp. 195
Dunn Mfg. Co., W. E. 361
du Pont de Nemours & Co., E. I. 241
Dur-O-waL 300

E

*Eagle Crusher Co. 61
*Eagle Iron Works 25
Easton Car & Construction Co. 3
Eaton Mfg. Co. 31
Economy Forms Corp. 370
Edmont Mfg. Co. 373
Eighmy Equipment Co. 388
Eimco Corporation 179
Electric Steel Foundry Co. 243
Engineered Equipment, Inc. 380
Ensign-Bickford Co. 189
Equipment Corp. of America 386
Erickson Power Lift Trucks, Inc. 367
Euclid Division, General Motors Corp. 43

F

*Falk Corporation 239
Farrell-Cheek Steel Co. 200
Fiske Bros. Refining Co., Lubriplate Division 260
Flexible Steel Lacing Co. 240
*Food Machinery & Chemical Corp. 317

*See also Detailed Information in 1956 Pit and Quarry HANDBOOK and CONCRETE INDUSTRIES YEARBOOK.

Why Thermoid Hose Lasts Longer

Quarry operators everywhere find Thermoid Hose stays on the job longer—cuts replacement costs and down time. One big reason is quality construction. Another: Thermoid designs hose for specific conditions and uses. Here are three examples:

THERMINE — High pressure air hose. Oil resistant tube is reinforced by heavy duty yarn. Mandrel-built for precision construction and greater strength. Smooth, abrasion resistant cover.

#325 S.B. SUCTION — Heavy duty hose for water suction service. Smooth bore, wrapped hose with heavy wire reinforcement, durable duck plies.

#300 AIR HOSE — Wrapped construction, oil resistant synthetic tube and covers. Heavy duck reinforcing plies. Ideal for use in mines and quarries.

These are typical examples of how Thermoid Personalized Service meets the specific, exacting requirements of the quarry industry.

Thermoid

Thermoid Company
Trenton, N.J.

Make Thermoid your choice, too for Multi-V Belts . . .

. . . and Conveyor Belting, specifically designed for the job.

Your Thermoid Distributor can help you select the Hose, Conveyor Belting, Multi-V Belts designed to lower your operating costs.

Foote Bros. Gear & Machine Corp. 228
Ford Motor Co. 16-17, 28
Forrer's Division, Spray-O-Bond Co. 371, 374
Four Wheel Drive Auto Co. 355
Frank, M. K. 391
*Frederick Iron & Steel, Inc. 287
Frog, Switch & Mfg. Co. 260
*Fuller Co. 174, 279
Fuller Mfg. Co. 207

G

Gar Wood Industries, Inc. 212-213
*General Electric Co. 169
General Engines Co., Inc. 377
General Motors Corp. 43, 249
General Refractories Co. 29
General Tire & Rubber Co. 219
Gilson Screen Co. 232
GO Corp. 351
Goodrich Industrial Products Co., B. F. 400
Goodrich Tire Co., B. F. 59
Goodyear Tire & Rubber Co. 1
Griffin Corp., Larry 360
*Gruendler Crusher & Pulverizer Co. 39
Gulf Oil Corp. 71-74
Gwynne, Inc., J. H. 369

H

H & L Tooth Company 286
Hannon & Sons, F. R. 50
*Hardinge Company, Inc. 234
Harnischfeger Corporation 40-41
Hawthorne, Inc., Herb J. 30
Hazard Wire Rope Division, American Chain & Cable Co., Inc. 67
Heat & Power Co., Inc. 391
Heidenreich, E. Lee, Jr. 385
Heineken, Inc., W. P. 290, 390
*Hendrick Mfg. Co. 218
Hendrix Mfg. Co. 176
Hercules Steel Products Co. 76
*Hewitt-Robins, Inc. 236
Hough Co., Frank G. 216-217
Howe Scale Co. 66
Huber-Warco Co., American Clay Machinery Div. 382
Hudson Pulp & Paper Corp. 269
*Hyster Co. 372

I

Industrial Overlay Metals, Inc. 70
*Ingersoll-Rand Co. 18-19
International Alloy Tool Steel Co. 226
International Harvester Co., Construction Equipment Div. 80-81, 195, 201, 225
International Nickel Co. 262
International Paper Co. Bagpak Division ....Inside Front Cover
*Iowa Manufacturing Co. 171
Irvington Form & Tank Corp. 360

J

Jaeger Machine Co. 206
Jeffrey Mfg. Co. 6
*Joy Manufacturing Co. 45, 56, 288

K

Kaiser Aluminum & Chemical Corp. 199
Kansas City Hay Press Co. 288
*Kennedy-Van Saun Mfg. & Engrg. Corp. 99, 172-173
Kensington Steel Co. 135
Kent Bag Co., Inc., Percy 218
Kent Machine Co. 305
Kirk & Blum Mfg. Co. 348
Koehring Co. 48-49
Koppers Co., Inc. 293
*Kraft Bag Corp. ....Back Cover

L

Laclede-Christy Division, H. K. Porter Company, Inc. 160
Large Engineering Co., H. B. 168
LEAP Concrete, Inc. 310
LeTourneau-Westinghouse Co. 177, 211, 257, 383
*Link-Belt Company 27, 221
Lone Star Cement Corp. 298
Lubrecht III, William 386, 393
Lubriplate Division, Fiske Bros. Refining Co. 260
Lukens Steel Co. 78

M

Macdonald Engineering Co. 295
Mack Trucks, Inc. 33-38
Macwhyte Company 77
Manhattan Rubber Division, Raybestos-Manhattan, Inc. 82-83
Manitowoc Engineering Co. 214
Marietta Concrete Corp. 226
Marion Metal Products Co. 242
Marion Power Shovel Co. 277
Marsh Engineering Co., E. F. 306
*McLanahan & Stone Corp. 117
McNally Pittsburgh Mfg. Corp. 121
Medusa Portland Cement Co. 325
Memphis Equipment Co. 368
Mexico Refractories Co. 85
Mid-Western Industries, Inc. 175
Mine & Smelter Supply Co. 227
Moline Malleable Iron Co. 210
Monarch Road Machinery Co. 314
Moore Dry Kiln Co. 371
*Morris Machine Works 244
Motorola Communications & Electronics, Inc. 311
Murphy Diesel Co. 285

N

National Conveyor & Supply Co. 312
National Wire Cloth Co. 362
*Naylor Pipe Co. 294
Neff & Fry Co. 256
New York Engineering Co. 62
New York Trap Rock Corp. 391
Noble Company 308-309
*Nordberg Manufacturing Co. 94-95
*Northern Blower Co. 246
Northwest Engineering Co. 5
Norwalk Vault Co. 373

O

Olsen Corp., Gene 351
Onan & Sons, Inc., D. W. 258
O'Neill, A. J. 391

*See also Detailed Information in 1956 Pit and Quarry HANDBOOK and CONCRETE INDUSTRIES YEARBOOK.

Owners know that every Allis-Chalmers engine is backed by the company's long reputation for building engines that are *tops* in dependability and economy — engines totaling hundreds of thousands of horsepower.

Operators like the continuous-duty rugged power, the reserve built into their Allis-Chalmers engines. As loads increase, these high-torque engines lug right through.

They ALL Like Allis-Chalmers Engines...

Mechanics find there are less parts — that they are simple, easily accessible, require fewer adjustments. Maintenance time is reduced to a minimum.

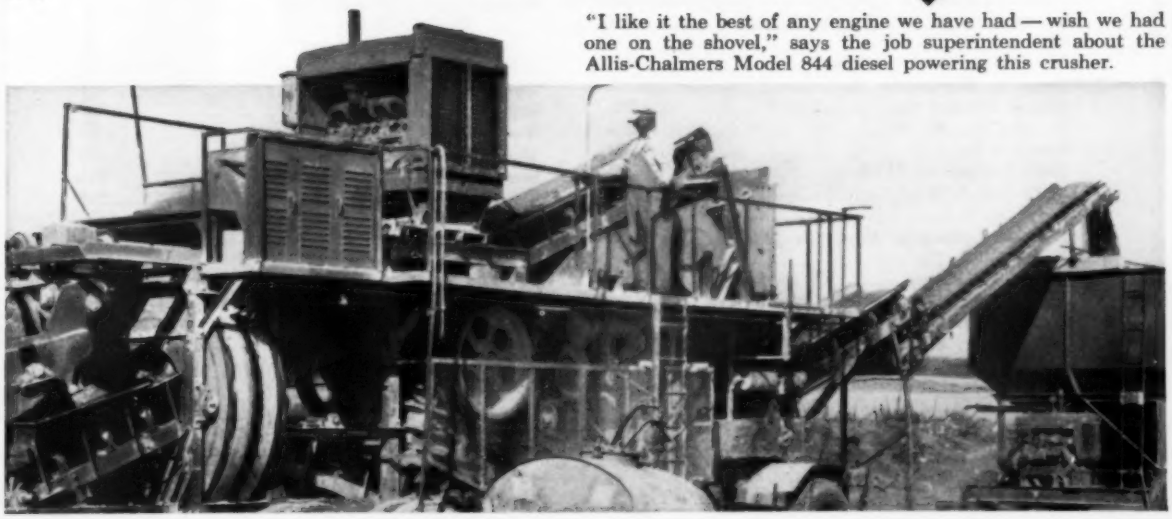
Everyone likes the Allis-Chalmers *3-deep* service from the dealers, the 18 branches and the factories.

For more reasons why "they all like Allis-Chalmers engines," see your Allis-Chalmers engine dealer, or write for detailed information.

ALLIS-CHALMERS, BUDA DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

BE-10



"I like it the best of any engine we have had — wish we had one on the shovel," says the job superintendent about the Allis-Chalmers Model 844 diesel powering this crusher.

Orton Crane & Shovel Co. 261
Oswalt Engineering Service Corp. 374

P

Pacific American Commercial Co. 393
*Page Engineering Co. 20
Patterson Foundry & Machine Co. 54
*Pennsylvania Crusher Div., Bath Iron Works Corp. 186
Pennsylvania Drilling Co. 385
*Pettibone Mulliken Corp. 69
Philadelphia Gear Works, Inc. 57
*Pioneer Engineering 203
Pioneer Rubber Co. 367
Porter Company, Inc., H. K. 160, 161
Portland Cement Assn. 349
Praschak Machine Co. 342
PreCaster, Inc. 321
Preco, Inc. 32
Presto Brick Machine Corp. 362
Productive Equipment Corp. 42

Q

*Quaker Rubber Division
*Quaker Pioneer Rubber Division, H. K. Porter Company, Inc. 161
Quinn Wire & Iron Works 332

R

Radio Corporation of America 353
Raybestos-Manhattan, Inc., Manhattan Rubber Division 82-83
*Raymond Division, Combustion Engineering, Inc. 170
Reichard-Coulston, Inc. 349
Reo Motors, Inc. 364-365
Republic Rubber Division 143
Roebling's Sons Corp., J. A. 281
Rollway Bearing Co., Inc. 253

S

Sarasota Engineering Co., Inc. 343
Sauerman Brothers, Inc. 248
Schaffer Poidometer Co. 258
Schield Bantam Co. 250
Scioto Lime & Stone Co., Inc. 392
*Screen Equipment Co. 196-197
Service Recorder Co. 4
Shawnee Mfg. Co., Inc. 21
Side-O-Matic Unloader Corp. 315
*Simplicity Engineering Co. 124-125
Sinclair Refining Co. 235
Sly Mfg. Co., W. W. 252
*Smidth & Co., F. L. 274
Smith Engineering Works 105
Smith, Inc., L. B. 389
*Smith Co., T. L. 337
Southern Lightweight Aggregate Corp. 44
Southern Tire Co. 46
Spang & Company 192
Spillman Co., R. L. 377
Spraying Systems Co. 286
Standard Dry Kiln Co. 367
Standard Metal Mfg. Co. 287
Stanhope, Inc., R. C. 388
Stearns Magnetic Products 182
*Stearns Manufacturing Co., Inc. 384
*Stedman Foundry & Machine Co., Inc. 75
*Stephens-Adamson Mfg. Co. 100-101
Stewart-Warner Corp., Alemite Division 185
Stoody Co. 148-149
Straub Mfg. Co. 157
Stulz-Sickles Co. 68
*Sturtevant Mill Co. 267
Surety Rubber Co. 379
Swabb Equipment Co., Inc., Frank 389
*Syntron Co. 9

T

Tamms Industries, Inc. 378
Taylor-Wharton Iron & Steel Co. 180
Texas Company 11
*Thermoid Company 395
*Thor Power Tool Co. 231
Thurman Scale Co. 292
Timken-Detroit Axle Div. 14-15
Timken Roller Bearing Co., Rock Bit Division 53
Toledo Scale Co. 254
Torrington Company 282
Towmotor Corporation 313
Tractomotive Corporation 265
*Traylor Engrg. & Mfg. Co. 278
Trinity Div., General Portland Cement Co. 363
Truck-Man Division, Knickerbocker Co. 362
Truck Mixer Manufacturers Bureau 323
*Twin City Iron & Wire Co. 373
Twin Disc Clutch Co. 280
*Tyler Co., W. S. 52

U

Union Wire Rope Corp. 208-209
Unit Step Form Co. 368
United States Rubber Co. 109
*United States Steel Co. 64-65
*Universal Engineering Corp. 69
Universal Road Machinery Co. 292
*Universal Vibrating Screen Co. 260
Unverzagt & Sons, G. A. 386

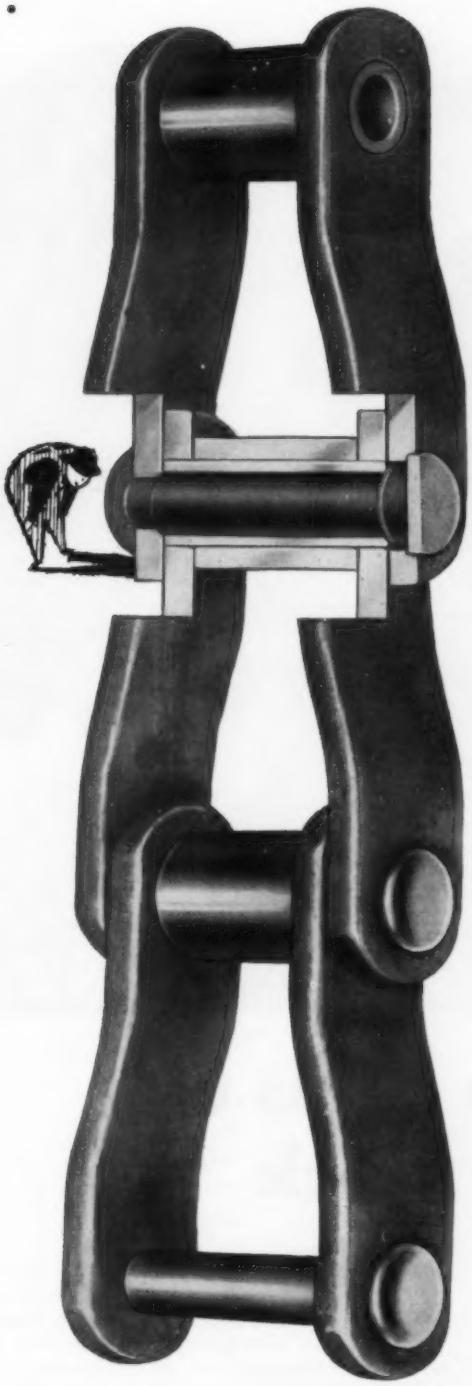
V

Victor Equipment Co. 270
Virginia Gear & Machine Corp. 57

W

Wagner Iron Works 245
Wall Colmonoy Corp. 288
*Wedge-Wire Corp. 256
Wenzel Machinery Co. 390
Western Machinery Co. 224
*Western Precipitation Corp. 289
Westinghouse Transit Mixer Division, LeTourneau-Westinghouse Co. 383
White Motor Co., Autocar Division 130-131
Williams, Roger F. 379
Winpower Mfg. Co. 63
Winslow Engrg. & Mfg. Co. 237
Wisconsin Motor Corp. 68
*Wood Co., Chas. E. 238

*See also Detailed Information in 1956 Pit and Quarry HANDBOOK and CONCRETE INDUSTRIES YEARBOOK.



REX®

Quality

...in every pitch

Ever think of chain as a series of journal bearings? That's what it actually is—a series of bearings connected together. The better the pin joints, the better the chain. Here's a look inside at the most important part of *any* chain.

Rex Chabelco Drive Chains are precision built. The finest engineering, design, materials and manufacturing processes result in the best possible drive chain per horsepower dollar.

Make your next drive chain a Rex Chabelco. We know you'll agree it is every bit as good as we claim. CHAIN Belt Company, 4604 West Greenfield Avenue, Milwaukee 1, Wisconsin.

CHAIN BELT COMPANY

Milwaukee 1, Wisconsin

B.F.Goodrich report:

Hose swallows chips off the granite block

B. F. Goodrich improvements in rubber brought extra savings

Problem: That workman is cutting and finishing a granite block for a building front. As he chisels and grinds, the chips and dust are collected by the hose and carried away. Fine, except that the company was throwing hose away every year or so. The sharp, destructive granite chips wore holes through every kind of rubber hose tried.

What was done: A B.F.Goodrich man heard about the trouble, and recommended a hose, specially developed by B.F.Goodrich to stand this rough treatment. It is made with a special lining of the toughest, wear-resisting rubber known. It is so tough that, on many jobs, this rubber outlasts the hardest steel 10 to 1.

Savings: The B.F.Goodrich suction hose was tried. It has now given more than 5½ years' service, and shows no signs of wearing out. In fact, the plant engineer says he expects several more years' use from the hose, and he's replacing all other brands with B.F.Goodrich.

Extra benefits: In addition to making this hose stand more abuse, B. F. Goodrich engineers have also made it flexible, easy to handle. A coil of round steel wire, buried in the hose, keeps it from crushing, kinking or collapsing.

Where to buy: Your B.F.Goodrich distributor has exact specifications for the B.F.Goodrich hose described here. And, as a factory-trained specialist in rubber products, he *can* answer your questions about *all* the rubber products B.F.Goodrich makes for industry. *B.F.Goodrich Industrial Products Co., Dept. M-883, Akron 18, Ohio.*

B.F.Goodrich

INDUSTRIAL PRODUCTS

In this photograph taken at a leading portland cement plant in Tennessee, you can see the Cleveland Size 500RT unit. It transmits power that moves the triple agitator back and forth in the big slurry tank.

Never a failure in 28 years of continuous service

FOR 28 years a Cleveland Worm Gear Speed Reducer has operated this triple traveling agitator. Unsheltered from the weather, it has been in service continuously, with never a replacement part or a repair.

This is a typical service record for Clevelands. Manufactured in a plant where high quality is the yardstick, by a company that has specialized on worm gearing for 44 years, every Cleveland unit can be depended on to perform satisfactorily, year in, year out.

Whenever you need a speed reducer or a drive, think of Cleveland. Sales representatives in all leading industrial markets are ready to discuss your problems and help you select the right Cleveland drives to meet your requirements. Write for our current Catalog 400. The Cleveland Worm and Gear Co., 3280 E. 80th St., Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.

CLEVELAND
Worm Gear
Speed Reducers

Take a good look at your multiwall bag!

Like women's bathing suits, multiwall bags also reveal the passing of time.

Is your bag a vivid, modern example of your business vitality . . . or is it dull, drab and lacking in appeal?

Is your bag the ideal package for your product, in size and construction, or is it a carry-over from the past?

To compete successfully in your markets, your package should be as up-to-date as this issue of the magazine . . . *if it isn't*, it's a good idea to send for us.

KRAFT BAG CORPORATION

Gilman Paper Company Subsidiary
630 Fifth Avenue, New York 20, N. Y.
Daily News Bldg., Chicago 6, Ill.
Plants at St. Marys, Georgia and Gilman, Vermont
Sales Agents for The Kraftpacker

Gilman PAPER CO.
• St. Marys Kraft Corp.
• Gaylord Container Div.
• The Gilbreath Corp.
• Kraft Bag Corp.

Dependable as a service for 3 generations

The Newest
KRAFTPACKER
will handle practically any free-flowing material—faster—and with more accuracy, than any open mouth bag filling machine of its type in use today—regardless of price!

☐ We are interested in improving our bag.
☐ We are interested in your Kraftpacker.

NAME OF COMPANY_____
ADDRESS_____
CITY_____ ZONE___ STATE_____ PRINCIPAL_____
PO_____

EUGENE B POWER
UNIVERSITY MICROFILMS
313 N FIRST AVE
ANN ARBOR MICH